Delaware Department of Natural Resources and Environmental Control
Delaware Coastal Management Program

Initial Review: _____
Updated On: _____
Complete: _____
Official Use Only

Coastal Zone Management Act Federal Consistency Form

This document provides the Delaware Coastal Management Program (DCMP) with a Federal Consistency Determination or Certification for activities regulated under the Coastal Zone Management Act of 1972, as amended, and NOAA's Federal Consistency Regulations, 15 C.F.R. Part 930. Federal agencies and other applicants for federal consistency are not required to use this form; it is provided to applicants to facilitate the submission of a Consistency Determination or Consistency Certification. In addition, federal agencies and applicants are only required to provide the information required by NOAA's Federal Consistency Regulations.

Project/Activity Name:	Chesapeake Utilities, State Route-24 Gas Main Extension

I. Federal Agency or Non-Federal Applicant Contact Information:

Contact Name/Title: Kieran Burns, EECI Environmental Project Manager (On Behalf of Chesapeake Utilities)

Federal Agency Contractor Name (if applicable): _____

Federal Agency: US Army Corps of Engineers
(either the federal agency proposing an action or the federal agency issuing a federal license/permit or financial assistance to a non-federal applicant)

Mailing Address: 17605 Nassau Commons Blvd, Unit D

City: Lewes State: DE Zip Code: 19958

E-mail: Kieran@envirotechecinc.com Telephone #: 302-684-5201 ext. 6

II. Federal Consistency Category:

- ○ Federal Activity or Development Project (15 C.F.R. Part 930, Subpart C)
- ○ Outer Continental Shelf Activity (15 C.F.R. Part 930, Subpart E)
- ○ Federal Financial Assistance (15 C.F.R. Part 930, Subpart F)
- ◉ Federal License or Permit Activity (15 C.F.R. Part 930, Subpart D)
- ○ Federal License or Permit Activity which occurs wholly in another state (interstate consistency activities identified in DCMP's Policy document)

III. Detailed Project Description (attach additional sheets if necessary):

Install Maintenance of traffic as approved by DelDOT. All work is to occur in the DelDOT Right of Way. Install erosion and sedimentation control structures, as needed. Test pit existing utilities to confirm location and depth. Excavate the sending and receiving pits as shown on the construction documents. Setup HDD machine at the sending pit. Bore +6-feet under Unity Branch at receiving pit. Pull back 8-inch diameter HDPE pipe. Tie the 8-inch diameter HDPE gas main into the existing gas main at both ends. Backfill sending and reciving pits with suitable fill. Remove erosion and sedimentation control structures, as needed. Clean up all excavations and complete restoration. Please see the attached Sequence of Construction and Frac-out Contingency Plan.

IV. General Analysis of Coastal Effects (attach additional sheets if necessary):

The project will have low coastal effect. This is due to abiding by the time of year restrictions set forth by state and federal agecies. In addition, the area utilized by the HDD is a 12-inch diameter boring hole going +/-293-feet from MHHW to MHHW, and to be at a minimum of +6-feet below Unity Branch. This means the +/-293-feet^2 area will not directly effect the surface wetlands, but below them. The highest effect will be sediment displacement due to the HDD, however, because of the high percentage of within the sediment analysis (Please see the attached AgroLab - Soil Lab Results), turbidity should remain relatively low.

V. Detailed Analysis of Consistency with DCMP Enforceable Policies (attach additional sheets if necessary)**:**

Policy 5.1: Wetlands Management

Time of year restrictions set forth by the state and federal regulatory agencies will be followed. In addition, the HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received.

Policy 5.2: Beach Management

Not Applicable

Policy 5.3: Coastal Waters Management (includes wells, water supply, and stormwater management. Attach additional sheets if necessary)

Time of year restrictions set forth by the state and federal regulatory agencies will be followed. Erosion and sedimentation controls will be set up at the start and end drillpit locations. In addition, a Frac-out Contingeny Plan has been produced incase of any emergencies. Please see the Supplemental Information Package.

Policy 5.4: Subaqueous Land and Coastal Strip Management

Time of year restrictions set forth by the state and federal regulatory agencies will be followed. In addition, the HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received. Erosion and sedimentation controls will be set up at the start and end drillpit locations. In addition, a Frac-out Contingeny Plan has been produced incase of any emergencies. Please see the Supplemental Information Package.

Policy 5.5: Public Lands Management

All work will occur in the DelDOT Right of Way. Please see the attached Supplemental Information Package "State and Federal Agency Letters" for the DE SHPO Letter stating "No Historic Properties Affected".

Policy 5.6: Natural Lands Management

Time of year restrictions set forth by the state and federal regulatory agencies will be followed. In addition, the HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received. Erosion and sedimentation controls will be set up at the start and end drillpit locations. In addition, a Frac-out Contingeny Plan has been produced incase of any emergencies. Please see the Supplemental Information Package.

Policy 5.7: Flood Hazard Areas Management

the HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received. The +/-293-feet^2 of area will have a minimal affect on the floodplain.

Policy 5.8: Port of Wilmington

Not Applicable

Policy 5.9: Woodlands and Agricultural Lands Management

Not Applicable

Policy 5.10: Historic and Cultural Areas Management

All work will occur in the DelDOT Right of Way. Please see the attached Supplemental Information Package "State and Federal Agency Letters" for the DE SHPO Letter stating "No Historic Properties Affected".

Policy 5.11: Living Resources

Please see the Supplemental Information Package for the "State and Federal Review Letters" including the US Fish and Wildlife Endangered Species Review and DNREC Environmental Review.

Policy 5.12 Mineral Resources Management

Not Applicable

Policy 5.13: State Owned Coastal Recreation and Conservation

Not Applicable

Policy 5.14: Public Trust Doctrine

The HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received. Surface waters will not be directly affected.

Policy 5.15: Energy Facilities

The HDD activity will begin in upland areas at the start drillpit location, go to a minimum of +6-feet below Unity Branch, and stop at the upland end drillpit location. No activity will occur until all necessary state and federal permits area received.

Policy 5.16: Public Investment

Not Applicable

Policy 5.17: Recreation and Tourism

Not Applicable

Policy 5.18: National Defense and Aerospace Facilities

Not Applicable

Policy 5.19: Transportation Facilities

The project will abide by DCMP policies. In addition, a Frac-out Contingeny Plan has been produced incase of any emergencies. Please see the Supplemental Information Package.

Policy 5.20: Air Quality Management

Not Applicable

Policy 5.21: Water Supply Management

Not Applicable

Policy 5.22: Waste Disposal Management

Not Applicable

Policy 5.23: Development

Delaware will remain the regulatory control over the gas main installed in the DelDOT Right of Way.

Policy 5.24: Pollution Prevention

A Frac-out Contingeny Plan has been produced incase of any emergencies. Please refer to the Supplemental Information Package for the "Frac-out Contingency Plan".

Policy 5.25: Coastal Management Coordination

Applications to DE DNREC - Wetlands and Subaqeuos Lands Section, in addition, the US Army Corps of Engineers have been submitted. Also, DNREC Environmental Review, DE SHPO, and US F&WS have been contacted in regards to this project.

VI. JPP and RAS Review (Check all that apply)**:**

Has the project been reviewed in a monthly Joint Permit Processing and/or Regulatory Advisory Service meeting?

☐ JPP ☐ RAS ■ None

*If yes, provide the date of the meeting(s): _____

VII. Statement of Certification/Determination and Signature (Check one and sign below)**:**

☐ **FEDERAL AGENCY CONSISTENCY DETERMINATION.** Based upon the information, data, and analysis included herein, the federal agency, or its contracted agent, listed in (I) above, finds that this proposed activity is consistent to the maximum extent practicable with the enforceable policies of the Delaware Coastal Management Program.

OR

☐ **FEDERAL AGENCY NEGATIVE DETERMINATION.** Based upon the information, data, and analysis included herein, the federal agency, or its contracted agent, listed in (I) above, finds that this proposed activity will not have any reasonably foreseeable effects on Delaware's coastal uses or resources (Negative Determination) and is therefore consistent with the enforceable policies of the Delaware Coastal Management Program.

OR

☒ **NON-FEDERAL APPLICANT'S CONSISTENCY CERTIFICATION.** Based upon the information, data, and analysis included herein, the non-federal applicant for a federal license or permit, or state or local government agency applying for federal funding, listed in (I) above, finds that this proposed activity complies with the enforceable policies of the Delaware Coastal Management Program and will be conducted in a manner consistent with such program.

Signature:	Kieran Burns		
Printed Name:	Kieran Burns	Date:	2/16/2023

Pursuant to 15 C.F.R. Part 930, the Delaware Coastal Management Program must provide its concurrence with or objection to this consistency determination or consistency certification in accordance with the deadlines listed below. Concurrence will be presumed if the state's response is not received within the allowable timeframe.

Federal Consistency Review Deadlines:

Federal Activity or Development Project (15 C.F.R. Part 930, Subpart C)	60 days with option to extend an additional 15 days or stay review (15 C.F.R. § 930.41)
Federal License or Permit (15 C.F.R. Part 930, Subpart D)	Six months, with a status letter at three months. The six month review period can be stayed by mutual agreement. (15 C.F.R. § 930.63)
Outer Continental Shelf Activity (15 C.F.R. Part 930, Subpart E)	Six months, with a status letter at three months. If three month status letter not issued, then concurrence presumed. The six month review period can be stayed by mutual agreement. (15 C.F.R. § 930.78)
Federal Financial Assistance to State or Local Governments (15 C.F.R. Part 930, Subpart F)	State Clearinghouse schedule

OFFICIAL USE ONLY:

Reviewed By:	Fed Con ID:	Date Received:
Public notice dates: to	Comments Received: ☐ NO ☐ YES *[attach comments]*	
Decision type: *(objections or conditions attach details)*	_ Decision Date:	

U.S. Army Corps of Engineers (USACE)

NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)

For use of this form, see 33 CFR 330; the proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 08-31-2023

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority	Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.
Principal Purpose	Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.
Routine Uses	This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.
Disclosure	Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (*see sample drawings and/or instructions*) and be submitted to the district engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (*agent is not required*)
First - Garth Middle - Last - Jones	First - Todd Middle - Last - Fritchman
Company - Chesapeake Utilities Co.	Company - Envirotech Environmental Consulting, Inc.
Company Title - Engineering Manager	E-mail Address - Todd@envirotechecinc.com
E-mail Address - gjones@chpk.com	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
Address- 500 Energy Lane, Suite 100	Address- 17605 Nassau Commons Boulevard
City - Dover State - DE Zip - 19901 Country - USA	City - Lewes State - DE Zip - 19958 Country - USA
7. APPLICANT'S PHONE NOs. with AREA CODE	**10. AGENT'S PHONE NOs. with AREA CODE**
a. Residence b. Business 302.213.7455 c. Fax d. Mobile 410.490.3086	a. Residence b. Business 302.684.5201 c. Fax 302.684.5204 d. Mobile

STATEMENT OF AUTHORIZATION

11. I hereby authorize, EECI to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.

Garth E. Jones Digitally signed by Garth E. Jones Date: 2023.02.06 09:15:27 -05'00' 2023-02-06

SIGNATURE OF APPLICANT DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)
Chesapeake Utilities, State Route-24 Gas Main Extension

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)
Unity Branch

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)
State Route 24 N at Unity Branch

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude	°N	Longitude	°W
	38.658864		-75.186706

City: Millsboro | State: DE | Zip: 19966

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID
Adjacent to #234-17.00-36.00 & #234-17.00-38.00

Municipality
Millsboro

Section | Township | Range

17. DIRECTIONS TO THE SITE
Please see the attached Driving Directions.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE
NWP - 12

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)
Install maintenance of traffic as approved by DelDOT. All work is to occur in the DelDOT ROW. Install erosion and sedimentation control structures, as needed. Test pit existing utilities to confirm location and depth. Excavate the sending and receiving pits as shown on the construction documents. Setup HDD machine at the sending pit. Bore +6-feet under Unity Branch to receiving pit. Pull back 8-inch HDPE pipe. Tie the 8-inch HDPE gas main into the existing gas main at both ends. Backfill sending and receiving pits with suitable fill. Remove erosion and sedimentation control structures, as needed. Clean up all excavations and complete restoration. Please see attached Sequence of Construction.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)
Please see the attached Sequence of Construction and Frac-out Contingency Plan.

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)
The purpose of this project is to extend the pre-existing natural gas utility line in order to provide access and use of natural gas for private and commercial use.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
<.007	293	+/-10.8 from HDD boring hole

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)
No other NWPs, RGPs, or IPs intended for this use. A State permit with the DNREC Wetland and Subaqueous section will be submitted.

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.
No compensatory mitigation is proposed.

25. Is any portion of the nationwide permit activity already complete? ☐ Yes ☒ No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (*see instructions*)

No listed threatened or endangered species. Please see the attach State and Federal Review Letters.

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (*see instructions*)

No listed historic properties of potential affect. Please see the attach State and Federal Review Letters.

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

The project is not occurring in a component of the National Wild and Scenic River System or study river. Please see the attach State and Federal Review Letters.

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? ☐ Yes ☒ No

If "yes", please provide the date your request was submitted to the Corps district:

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (*see instructions*)

N/A

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

Garth E. Jones	Digitally signed by Garth E. Jones Date: 2023.02.06 09:15:58 -05'00'	2023-02-06	Todd Fritchman	Digitally signed by Todd Fritchman Date: 2023.02.06 08:56:56 -05'00'	2022-12-19
SIGNATURE OF APPLICANT		DATE	SIGNATURE OF AGENT		DATE

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

January 20, 2023

UNITED STATES ARMY CORPS OF ENGINEERS
PRE-CONSTRUCTION NOTIFICATION
NATIONWIDE PERMIT #12: NATURAL GAS PIPELINE ACTIVITIES

APPLICANT

Mr. Garth Jones
Chesapeake Utilities
500 Energy Lane, Suite 100
Dover, DE 19901
302.213.7455
gjones@chpk.com

AGENT

Mr. Todd Fritchman
Envirotech Environmental Consulting, Inc. (EECI)
17605 Nassau Commons Boulevard, Unit D
Lewes, DE 19958
302.654.5201
todd@envirotechecinc.com

ATTACHMET A: Site Maps of the Subject Property
ATTACHMET B: Chesapeake Utilities – Profile and Plan View
ATTACHMET C: Chesapeake Utilities – Sequence of Construction and Frac-out Contingency Plan
ATTACHMET D: AgroLab – Soil Lab Results
ATTACHMET E: Wetland Delineation Report
ATTACHMET F: State and Federal Agency Letters

SITE LOCATION AND DESCRIPTION

The project site is located along State Route-24 (SR24), between Hollymount Road and Green Road, Millsboro, Sussex County, Delaware. Latitude: 38.6589º, Longitude: -75.1891º West. See attachments for location of subject property and directions to the site. The site is depicted on USGS topographic map, Fairmount, Delaware quadrangle and is adjacent to the Unity Branch, Hopkins Prong and Burton Prong; tributaries of Rehoboth Bay. The site is shown on the National Wetlands Inventory Map, and is designated uplands, adjacent to waters mapped E1UBL (Estuarine subtidal, unconsolidated bottom, saltwater tidal, subtidal), wetlands mapped E2EM1P (Estuarine intertidal persistent emergent wetland, irregularly flooded) and PSS1T (Freshwater Forested/Shrub Wetland, Semi-permanently flooded, freshwater tidal floodplains and banks). The site is depicted on State of Delaware DNREC wetland map and is mapped M (Marsh), adjacent to W (water).

PROPOSED PROJECT

The proposed project is to extend an 8-inch gas main located along State Route 24 (SR 24), from Hollymount Road and down Banks Road to Green Road, Rehoboth Beach, Delaware 19971. The project will be perpendicular along State Route 24/Banks Road and construction will occur in the DelDOT Right-Of-Way. The project will cross over Unity Branch leading into Hopkins Prong along SR 24. Prior to construction, a limited wetland delineation was performed for permitting purposes. Project location map is attached.

METHOD OF INSTALLATION

Install maintenance of traffic as approved by DelDOT. Install erosion and sedimentation control structures, as needed. Test pit existing utilities to confirm location and depth. Excavate the sending and receiving pits as shown on the construction documents. Setup HDD machine at the sending pit. Bore +6-feet under Unity Branch to receiving pit. Pull back 8-inch HDPE pipe. Tie the 8-inch HDPE gas main into the existing gas main at both ends. Backfill sending and

receiving pits with suitable fill. Remove erosion and sedimentation control structures, as needed. Clean up all excavations and complete restoration. Please see attached Sequence of Construction.

PROJECT PURPOSE

The purpose of this project is to extend the pre-existing natural gas utility line in order to provide access and use of natural gas for private and commercial use.

ENVIRONMENTAL IMPACTS

The project is not expected to have any significant environmental impacts due to the safety measures taken during construction activity. Please see attached Frac Out Contingency Plans.

AVOIDANCE/MINIMIZATION OF IMPACTS

The project has been designed by Envirotech to maximize environmental benefits and to minimize environmental impacts to the greatest extent feasible. In addition, please see the attached Frac Out Contingency Plan. It is not feasible due to cost constraints and location factors to avoid Unity Branch.

COMPENSATION FOR IMPACTS

Since the proposed project will not result in loss of vegetated wetlands, no compensation is proposed.

TYPES AND AMOUNT OF FILL MATERIAL

Volume of fill material (clean select fill) will be approximately +/-10.8 cubic yards. This includes the 12-inch diameter gas main and fill.

SURFACE AREA TO BE FILLED

Underwater (channelward of MWL): 0
Intertidal (MHWL-MLWL): 0
SAV: n/a
Wetlands: n/a
Note** Work will occur in the DelDOT Right-of-Way under Unity Branch, below the three 48-inch culvert pipes. **

AGENCY COORDINATION

EECI has coordinated with Sarah Carr of DE State Historic Properties Office (DE SHPO), Danielle Ellis of the DNREC Environmental Review, and the US Fish and Wildlife Services in regards to this project.

COMPLIACE WITH 2022/2023 NATIONWIDE PERMIT GENERAL CONDITIONS

1. **Navigation:** The proposed project will not affect navigational use of Unity Branch, Hopkins Prong or Burton Prong.

2. **Aquatic Life Movements:** There is not anticipated to be significant disruption of aquatic life movements as a result of this project.

3. **Spawning Areas:** The proposed activity will not affect any spawning areas.

4. **Migratory Bird Breeding Areas:** The proposed activity will not affect breeding areas.

5. **Shellfish Beds:** The project is located in an area where shellfish beds will not be affected.

6. **Suitable Material:** The clean select fill will be obtained from appropriate vendor. All material (piping) will be free of toxic pollutants and will not affect water quality.

7. **Water Supply Intakes:** The proposed project will not affect public water supply intake.

8. **Adverse Effects from Impoundments:** No impoundments are proposed.

9. **Management of Water Flows:** The proposed project is not anticipated to restrict water flow. The gas line will be installed beneath the creek bed.

10. **Fills within 100-Year Floodplains:** The proposed project will be constructed in accordance with code requirements.

11. **Equipment:** The horizontal directional drilling (HDD) system will be placed upland of the wetlands, within SR-24's northbound right-of-way.

12. **Soil Erosion and Sediment Controls:** Proper soil erosion and sediment controls will be implemented at the bore pit locations.

13. **Removal of Structures or Temporary Fills:** No temporary structures nor fills are associated with this project.

14. **Proper Maintenance:** The project will be properly maintained by the contractor and/or the applicants upon completion.

15. **Single and Complete Project:** The proposed activity is a single and complete project.

16. **Wild and Scenic Rivers:** The proposed project is not located within any component of the National Wild and Scenic River system (See attached State and Federal Review Documents).

17. **Tribal Rights:** The proposed activity will not impact reserved tribal rights (See attached State and Federal Review Documents).

18. **Endangered Species:** No known threaten or endangered species lay within the Subject Property according to the US F&WS and DNREC Environmental Review (See attached State and Federal Review Documents).

19. **Migratory Birds and Bald and Golden Eagles:** Please see attached is the US F&WS Endangered Species list and Online Certification Letter (See attached State and Federal Review Documents).

20. **Historic Properties:** No historic properties were identified (See attached State and Federal Review Documents).

21. **Discovery of Previously Unknown Remains and Artifacts:** The contractor will notify the District Engineer if any previously unknown historic, cultural, or archaeological remains or artifacts are discovered during construction.

22. **Designated Critical Resource Waters:** A copy of this PCN is being submitted to the Delaware Division of Fish & Wildlife Species Conservation and Research Program for comments on Critical Resource Waters; response will be forwarded to the Corps.

23. **Mitigation:** There will be no impacts in vegetated wetlands (no wetland loss), therefore, no mitigation is proposed.

24. **Safety of Impoundment Structures:** No impoundment structures proposed.

25. **Water Quality:** DE WQC has been issued for NWP#12. Additionally, will follow the conditions of no discharge into an ERES and will contact DNREC Emergency Response if there is a release of muds and/or drilling fluids into surface waters. Please see the attached Frac Out Contingency Plan.

26. **Coastal Zone Management:** a copy of this PCN will be sent to the DE CZM.

27. **Regional Case-by-Case Conditions:** The project will comply with NWP Regional conditions for Delaware.

28. **Use of Multiple Nationwide Permits:** The proposed project utilizes only Nationwide Permit #12 (Natural Gas Pipeline Activities).

29. **Transfer of Nationwide Permit Verifications:** In the (unlikely) event that the applicants sell the property, a letter will be submitted to the Corps' Philadelphia District Office to validate the transfer.

30. **Compliance Certification:** Upon authorization of Nationwide Permit #12 for the proposed project, the permittees will submit a signed certification regarding the completed work.

31. **Activities Affecting Structures of Works Built by the United States:** The proposed project will not alter, occupy, or use a Federally-authorized Civil Works project.

32. **Pre-Construction Notification:** Terms of the General Conditions regarding the timing, contents, form, agency coordination, and District Engineer's decision of the Pre-Construction Notification have been/will be followed.

COMPLIANCE WITH 2022/2023 REGIONAL CONDITIONS FOR DELAWARE

This PCN complies with all applicable NWP Regional Conditions for Delaware:

Condition G-1.

1. Signed application Form 6082 is attached.
2. The PCN describes all activities that the applicants plan to undertake, and is accompanied by the required information (location maps; latitude/longitude; tax map parcel number; photographs; delineation of areas within Federal jurisdiction; etc.). State and Federal agencies such as: US Fish & Wildlife Services (US F&WS), Delaware Division of Fish & Wildlife Species Conservation and Research Program, and Delaware Division of Historical and Cultural Affairs have been coordinated with regarding this project. Avoidance, minimization, and compensation have been addressed.

Condition G-2. Not located in the National Wild and Scenic Rivers System. (See attached State and Federal Review Documents).

Condition G-3. Review letters from USF & WS and Delaware Division of Fish & Wildlife Species Conservation and Research Program addressing endangered species are attached. (See attached State and Federal Review Documents).

Condition G-4. A review of the NOAA Fisheries ESA Section 7 Mapper found that there are no listed, proposed or candidate species located in the area affected by the proposed action. (See attached State and Federal Review Documents).

Condition G-5. Review letters from NOAA/NMFS addressing Essential Fish Habitat (EFH) will be forwarded to Army Corps.

Condition G-6. Fish & Wildlife Coordination Act pertaining to time-of-year restrictions to protect listed species will be followed.

Condition G-7. The Subject Property does not reside in Critical Resource Waters. Pleases see attached is the review letter from the Delaware Division of Fish & Wildlife Species Conservation and Research Program.

Please contact me if you have any questions or concerns.

Thank you,

Todd Fritchman

Todd Fritchman
President/ Lead Environmental Professional
Envirotech Environmental Consulting, Inc.
17605 Nassau Commons Boulevard, Unit D
Lewes, Delaware 19958
Cell: 302.462.5615
Fax: 302.684.5204

ATTACHMENT A

Site Maps of the Subject Property

Chesapeake Utilities - Gas Line Extension

State Route 24 at Unity Branch
Millsboro, Delaware 19966

Envirotech
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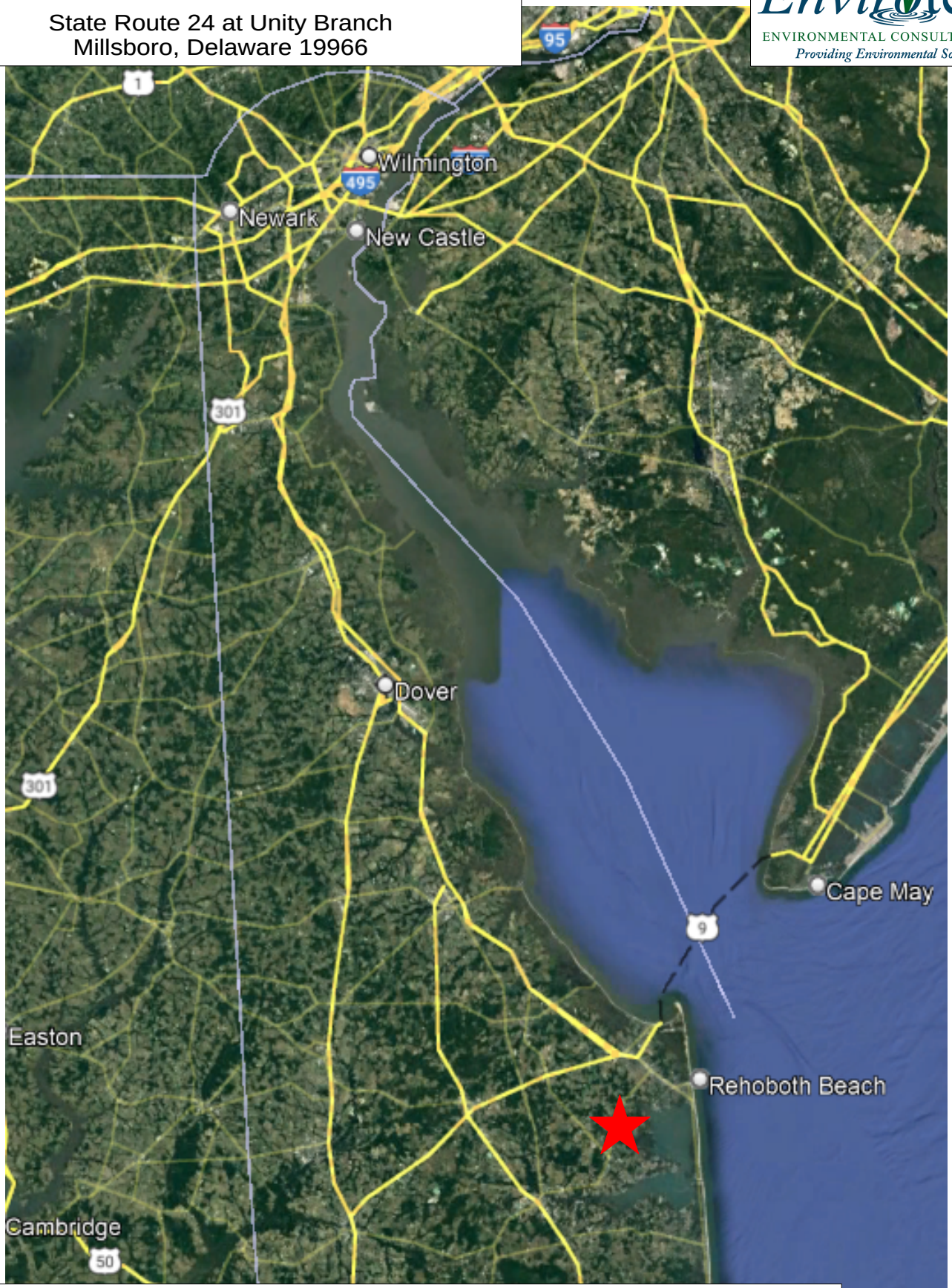


NOTE*Imagery Taken From Google Earth Pro*

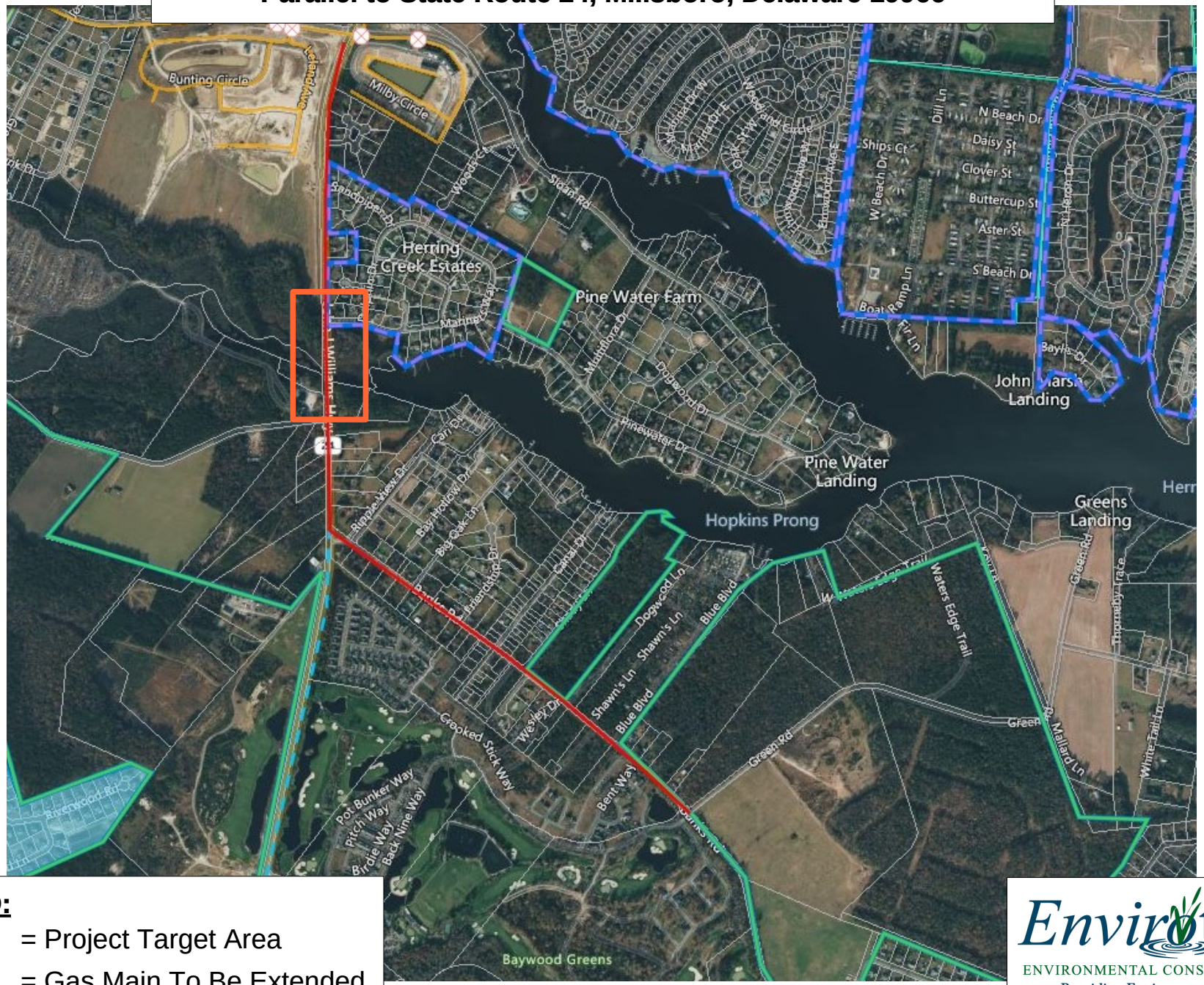
LEGEND:

★ = Subject Property Located in the DelDOT Right-of-Way Adjacent to Tax Map Parcels #234-17.00-36.00 & #234-17.00-38.00

N

Chesapeake Utilities

Project Area Located at Unity Branch Leading into Hopkins Prong, Parallel to State Route 24, Millsboro, Delaware 19966



LEGEND:

= Project Target Area

= Gas Main To Be Extended

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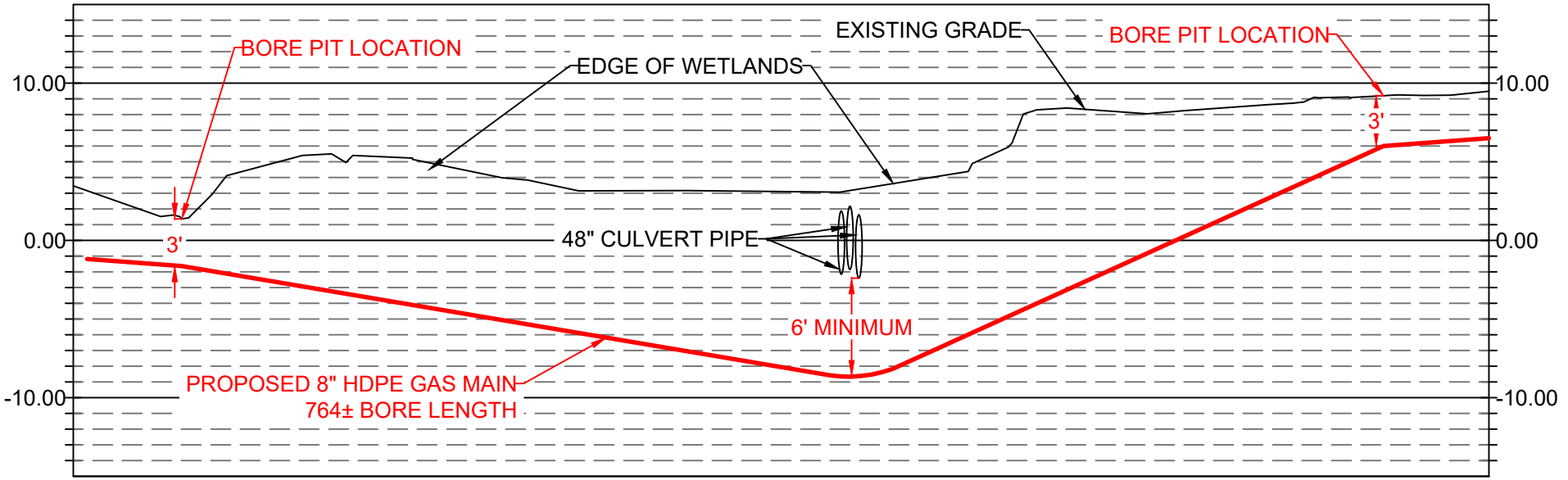
Providing Environmental Solutions

ATTACHMENT B

Chesapeake Utilities – Profile and Plan View

Profile View of Rt 24 at Unity Branch

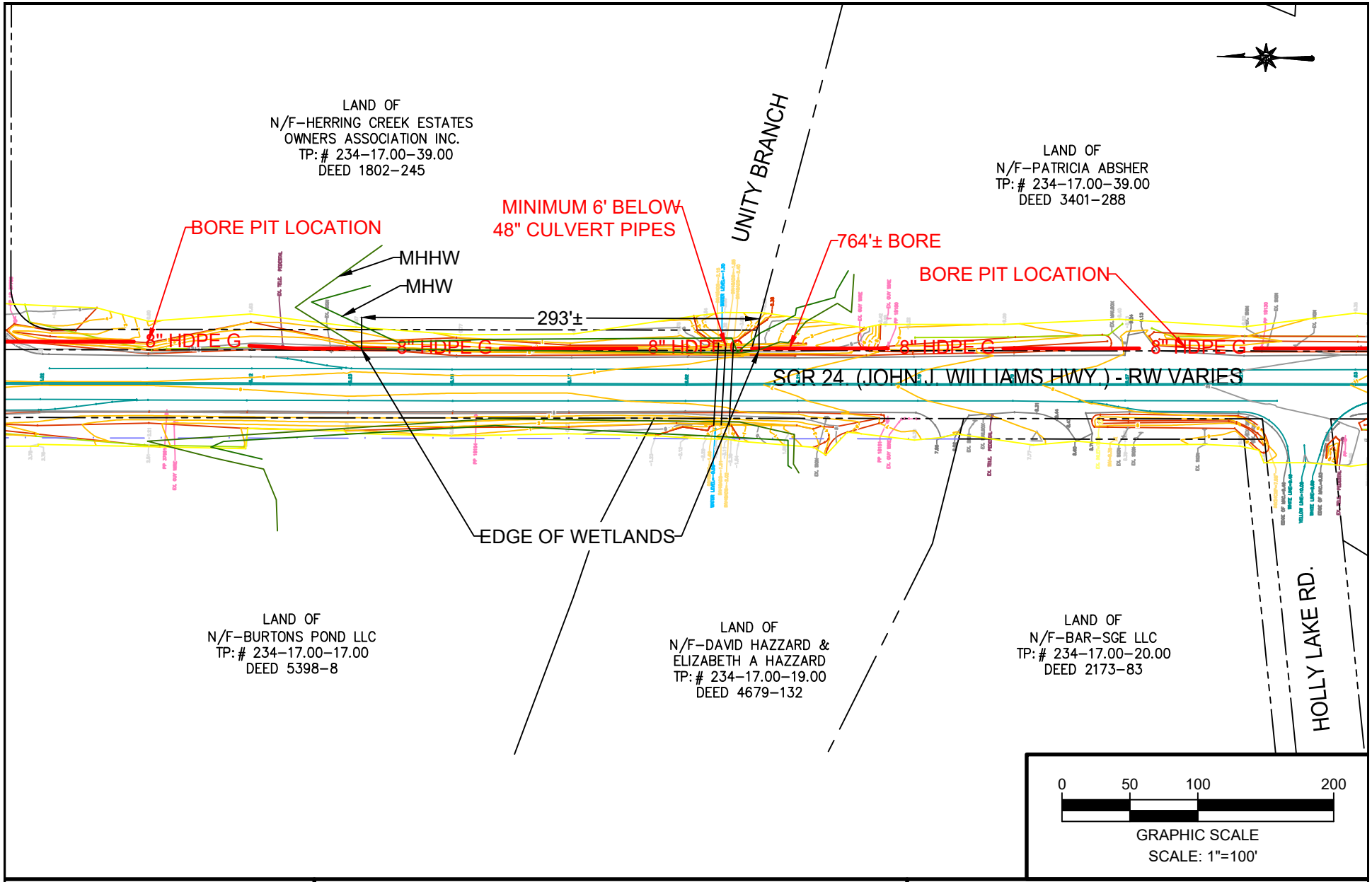


HORIZONTAL SCALE: 1"=100'

VERTICAL SCALE: 1"=10'

CHESAPEAKE UTILITIES CORPORATION

PROPOSED 8" HDPE GAS MAIN
RT 24 & UNITY BRANCH
MILLSBORO
DRAWN: 2022 DECEMBER 16
SUSSEX COUNTY, DELAWARE



CHESAPEAKE UTILITIES CORPORATION

PROPOSED 8" HDPE GAS MAIN
RT 24 & UNITY BRANCH
MILLSBORO
DRAWN: 2022 DECEMBER 16
SUSSEX COUNTY, DELAWARE

ATTACHMENT C

Chesapeake Utilities – Sequence of Construction and Frac-out Contingency Plan

Sequence of Construction:

- Schedule pre-construction meeting with DelDOT five (5) days prior to commencing any site work.

- Notify Miss Utility (811) a minimum of two (2) full business days prior to any construction activity. Construction activities shall not commence until all utilities have responded to the miss utility ticket.

- Install maintenance of traffic as approved by DelDOT.

- Install erosion and sedimentation control structures, as needed.

- Test pit existing utilities to confirm location and depth.

- Excavate the sending and receiving pits as shown on the construction documents.

- Setup HDD machine at the sending pit.

- Bore under Unity Branch to receiving pit.

- Pull back 8-inch HDPE pipe.

- Tie the 8-inch HDPE gas main into the existing gas main at both ends.

- Backfill sending and receiving pits with suitable fill.

- Remove erosion and sedimentation control structures, as needed.

- Clean up all excavations and complete restoration.

- Complete final inspection by DelDOT.

CHESAPEAKE UTILITIES
UNITY CROSSING
HORTIZONTAL DIRECTIONAL DRILLING
FRAC-OUT CONTINGENCY PLAN

Purpose and Objective

The purpose of this document is to identify procedures to be followed in the event of a frac-out during horizontal directional drilling operations for the Unity Branch crossing associated with the Keastone approach gas main project near Millsobro, Delaware. A frac-out is a condition in which drilling mud is released through fractures in the soil and migrates toward the surface. Drilling mud consists mainly of a bentonite clay-water mixture, which is not considered to be hazardous or toxic. However, the objective is to minimize the potential of a frac-out and identify response measures in the event that a frac-out occurs, in order to mitigate any potential adverse impact to water bodies and associated habitats. Escape of drilling mud from a frac-out is most common near the directional drill entry and exit locations. However, frac-outs can occur at any location along a directional drill.

This Frac-Out Contingency Plan provides operational procedures and responsibilities for the prevention, containment and clean-up of frac-outs associated with horizontal directional drilling operations.

The objectives of this plan are as follows:

- Minimize the potential for a frac-out due to horizontal directional drilling operations.
- Identify timely detection of frac-outs.
- Provide for environmental protection of the water bodies and associated habitats.
- Establish response procedures in the event of a frac-out.
- Provide for notifications to the applicable parties and regulatory agencies.

Scope of Work for Horizontal Directionally Drilled Crossings

The pipeline alignment drawings show the targeted entry and exit locations and staging areas. These layouts are designed to minimize the potential for impact to the water bodies. The significant clearance between the bottom of the water bodies and the top of the proposed pipeline provides additional protection for the water bodies.

Inspection

A Project Superintendent will be on-site at all times during horizontal directional drilling operations. The Project Superintendent will be experienced in directional drilling and the associated environmental protection measures. The Project Superintendent will ensure that the proper equipment and materials are available on-site at all times, and that the necessary procedures are followed on a daily basis.

Mitigation Measures

- The Project Superintendent will contact Chesapeake Utilities District Operations in the event of a frac-out. Chesapeake Utilities will contact DNREC. Prior to construction, a complete list of applicable regulatory agencies will be prepared and available at the job site.
- All equipment will be checked and maintained daily to prevent hazardous material leaks.
- Sufficient supplies of spill containment materials and hay bales will be available on-site at all times. A vacuum truck will also be available at all times.
- Frac-out barrels will be located on-site at all times.
- Entry and exit drill pits will be contained using berms, silt fence and/or hay bales.
- Visual observation (on-land and water bodies) will occur on a regular basis throughout directional drilling operations so that a potential surface frac-out can be identified.
- Directional drilling operations will be suspended immediately upon evidence of a drop in drilling pressure, lack of drilling mud returns at the entrance pit or other evidence of a frac-out.
- In the event of a frac-out, the on-site Project Superintendent will evaluate the situation and provide direction for mitigation actions.
- All drilling bentonite will be recycled through a reclaimer system.
- Clean up of all frac-outs/spills shall begin immediately.
- In the event of a frac-out that reaches the surface but not the water body, bentonite shall be contained, removed and disposed of at an approved facility.
- In the unlikely event that a frac-out reaches the water body, corrective action will be taken immediately. Clean-up work will be performed by hand to the maximum extent practicable. A vacuum truck would be used to vacuum up the associated bentonite and soils as necessary. The materials will be properly disposed of at an approved facility. Clean sand would be replaced in the riverbed if necessary.
- All cleanup materials will be disposed on a daily basis as applicable, and at the completion of the project.
- In the event that a drill hole must be abandoned, the bore will be sealed by the injection of a high-viscosity bentonite slurry.
- Construction operations will not be allowed to re-start until approved by the on-site Project Superintendent.
- Documentation will be prepared for any frac-outs that occur during directional drilling operations.

ATTACHMENT D

AgroLab – Soil Lab Results

AgroLab
Serving Agriculture and Soil Fertility Professionals

Account No. : 3570

Soil Analysis Report

Invoice No. : 1140040
Date Received : 02/10/2023
Date Analyzed: 02/13/2023
Lab Number : 6685

ENVIROTECH ENVIRONMENTAL CONSULT
17605 NASSAU COMMONS BLVD
LEWES DE 19958

Results For : ENVIROTECH
Location : CREEK BED
Sample ID : SR-24

Extraction Method: Mehlich 3

	Analysis	Sufficiency Levels: Deficient / Low / Sufficient / High
pH	6.2	
Buffer pH	6.7	
Soluble Salts, EC mmho/cm	2.59	
Nitrate-N, ppm N	0.3	
Nitrate-N, Lbs N/A	1.00	
Depth	0 - 8 in	
Ammonium-N ppm	34.2	
Phosphorus, ppm P	20	
P Saturation	16	
UMD P FIV	24	
Potassium, ppm K	96	
Calcium, ppm Ca	354	
Magnesium, ppm Mg	384	
Sulfur, ppm S	104	
Boron, ppm B	1.30	
Zinc, ppm Zn	3.58	
Manganese, ppm Mn pH sensitive	4.7	
Copper, ppm Cu	3.15	
Sodium, ppm Na	1500	
CEC Sum of Cations, meq/100g	13.2	
H % Saturation	11	
K % Saturation	2	
Ca % Saturation	13	
Mg % Saturation	24	
Na % Saturation	49	
Organic Matter, %	1.6	
Organic Matter (LOI @ 455 C), %	2.42	
Est. Organic Carbon, %	0.96	
Aluminum, ppm Al	280.0	
Iron, ppm Fe	160.0	

Reviewed By : L.D. Severson - AgroLab Inc **2/15/2023** **Copy : 1**

Bus: 302/566-6094
Email: admin@agrolab.us
web site
www.agrolab.us
101 Clukey Dr.
Harrington, DE 19952

AgroLab
Serving Agriculture and Soil Fertility Professionals

Account No. : **3570**

Soil Analysis Report

Invoice No. : **1140040**
Date Received : **02/10/2023**
Date Analyzed: **02/13/2023**
Lab Number : **6685**

ENVIROTECH ENVIRONMENTAL CONSULT
17605 NASSAU COMMONS BLVD
LEWES DE 19958

Results For : ENVIROTECH
Location : CREEK BED
Sample ID : SR-24

Extraction Method: Mehlich 3

USDA Soil Texture	Loamy Sand
Sand, %	83
Silt, %	11
Clay, %	6

Reviewed By : **L.D. Severson - AgroLab Inc** **2/15/2023** **Copy : 1**

Bus: 302/566-6094
Email: admin@agrolab.us
web site
www.agrolab.us
101 Clukey Dr.
Harrington, DE 19952

Envirotech
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

CHAIN-OF-CUSTODY

Client/Company Name: Envirotech Environmental Consulting, Inc	Comments/Special Instructions:
Attn: Lyle de la Rosa	
Address: 17605 Nassau Commons Boulevard	
Unit D Lewes, DE 19958	
Phone: 302.684.5201 Alt 5570	
Fax: 302.684.5204	
E-mail: lyle@envirotechecinc.com	
Project Name: State Route 24	Send Invoice To:
Project Number:	P.O. / Contract No:

Lab Use Only: ID Number	Client Sample Identification	Sample Information: Sampling Date	Sampling Time	Matrix	Bottle or Container Information: Sample Preservative	Bottle Type	Bottle Size	No. of Bottles	Analyses Requested: 134							Lab Use Only: Sample Condition
	01	1/31/23	9:30AM	sed	n/A	bag	1 gallon	1	X							

Lab Use Only: Storage Location: | Freezer #: | Refrigerator #: | Shelf #:

Sampler's Signature and Printed Name:

Relinquished By (Signature and Printed Name):	Date	Time	Transported By:	Received By (Signature and Printed Name):	Date:	Time:
Lyle de la Rosa	1/31/23			Joyce Alcuby	1.31.23	10:40 AM

ATTACHMENT E

Wetland Delineation Report

Chesapeake Utilities

DE State Route 24

Wetland Delineation

Summary Report of Findings

Site Reconnaissance Dates: June 1st, 2022

Envirotech™
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

17605 Nassau Commons Boulevard,
Unit D
Lewes, DE 19958
(302) 684-5201, Fax 684-5204
www.envirotechecinc.com

Wetland Delineation Project

Project Location:

DE State Route 24
Millsboro, DE 19966

Prepared for:

Chesapeake Utilities
500 Energy Drive
Dover, DE 19901

Review by:

U.S. Army Corps of Engineers- Regulatory Branch
100 Penn Square East
Wanamaker Building
Philadelphia, PA 19107

Delaware Natural Resources and Environmental Control
Wetlands and Subaqueous Lands
89 Kings Highway
Dover, DE 19901

Prepared by:

Envirotech Environmental Consulting, Inc.
17605 Nassau Commons Boulevard, Unit D
Lewes, DE 19958

Envirotech™
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

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ATTACHMENTS:

Attachment A: Site Maps of the Subject Property.
Attachment B: Site Photographs
Attachment C: National Wetlands Inventory (NWI) Map.
Attachment D: USDA Soil Report.
Attachment E: 2019 USGS Topographic Map
Attachment F: Wetland Flag Location Coordinates.
Attachment G: Wetland Determination Data Form.

INTRODUCTION:

The purpose of this study is to determine and map all wetlands and all other "waters of the United States" subject to jurisdiction under Section 404 of the Clean Water Act, Section 10 of The Rivers & Harbors Act and the State of Delaware Wetlands and Subaqueous Lands Section Jurisdiction. This effort is needed to ensure compliance for the proposed development area with the standards regulated by the U.S. Army Corps of Engineers (COE) and the State of Delaware.

This document contains results obtained through background site research pertaining to the wetland delineation performed at four (4) parcels of land in Millsboro, DE 19966.

SITE DESCRIPTION:

On, June 1, 2022, Envirotech Environmental Consulting, Inc. performed a wetland delineation on tax parcel number's 234-17.00-17.00, 234-17.00-19.00, 234-17.00-36.00, and 234-17.00-38.00. The Subject Property consists of the above-mentioned tax parcel numbers located off Delaware State Route 24 (SR-24) as well as the western right of way and shoulder of SR-24, owned by Delaware Department of Transportation (DelDOT). The subject property also extends westward along Unity Branch and eastward along Hopkins Prong in Millsboro, DE 19966. During the site reconnaissance, Estuarine and Marine Wetland, Freshwater Forested/Shrub Wetland, and Estuarine and Marine Deepwater were located on the subject properties.

OVERVIEW

The following resources were used during the preliminary research to determine the conditions identified on the subject properties.

National Wetlands Inventory (NWI):

A database search of the subject properties was performed by EECI using the National Wetlands Inventory (NWI) Map. It was observed that the subject property was mapped/identified in the search. Please refer to the Attachments for a copy of the NWI map for the inspected areas.

The following wetland classifications were identified on the Subject Property:

- **E2EM1P - Estuarine and Marine Wetland**
- **E1UBL - Estuarine and Marine Deepwater**
- **E2EM5P - Estuarine and Marine Wetland**
- **E2EM1N - Estuarine and Marine Wetland**
- **PFO1R - Freshwater Forested/Shrub Wetland**

For a complete code description, please refer to the NWI Classification Code list below.

Classification Codes according to the Federal National Wetlands Inventory:

- System **Estuarine (E):** The Estuarine System consists of Deepwater tidal habitats and adjacent tidal wetlands that are usually semi enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines, there is appreciable dilution of sea water. Offshore areas with typical estuarine plants and animals, such as red mangroves (Rhizophora mangle) and eastern oysters (Crassostrea virginica), are also included in the Estuarine System.

- System **Palustrine (P)**: The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.

- Subsystem **Intertidal (2):** The substrate in these habitats is flooded and exposed by tides; includes the associated splash zone.

- Class **Emergent (EM):** Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- Class **Forested (FO)**: Characterized by woody vegetation that is 6 m tall or taller.

- Class **Unconsolidated Bottom (UB):** Includes all wetlands and deep-water habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.

- Subclass **Phragmites australis (5):** Large perennial grass found in wetlands throughout temperate and tropical regions of the world. It is characterized by its towering height of up to four meters (about 14 feet) and its stiff wide leaves and hollow stem. Its feathery and drooping inflorescences (clusters of tiny flowers) are purplish when flowering and turn whitish, grayish, or brownish in fruit.

- Subclass **Persistent (1):** Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.

- Subclass **Broad-Leaved Deciduous (1)**: Woody angiosperms (trees or shrubs) with relatively wide, flat leaves that are shed during the cold or dry season, (e.g., black ash).

- Water Regime **Regularly Flooded (N)**: Tides alternately flood and expose the substrate at least once daily.

- Water Regime **Seasonally Flooded-Tidal (R)**: Tidal fresh surface water is present for extended periods (generally for more than a month) during the growing season but is absent by the end of the season in most years. When surface water is absent, the depth to substrate saturation may vary considerably among sites and among years. This Modifier is used for Palustrine habitats only.

- Water Regime **Subtidal (L):** Tidal salt water continuously covers the substrate.

National Web Soil Survey Summary:

According to the National Web Soils Survey provided by the United States Department of Agriculture (USDA), the following soil types occur within the Subject Property. Please refer to Table No. 1:

Table No. 1: Summary of Soil Types located at the Subject Properties.

Sussex County, Delaware			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
DoA	Downer sandy loam, 0 to 2 percent slopes, Northern Tidewater Area	0.6	2.0%

EvD	Evesboro loamy sand, 5 to 15 percent slopes	0.6	2.3%
FhA	Fort Mott-Henlopen complex, 0 to 2 percent slopes	2.9	10.3%
FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes	1.2	4.1%
FmA	Fort Mott loamy sand, 0 to 2 percent slopes	11.9	42.4%
HpB	Henlopen loamy sand, 2 to 5 percent slopes	1.6	5.6%
LO	Longmarsh and Indiantown soils, frequently flooded	8.1	28.7%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water	1.3	4.5%
Totals for Area of Interest		28.1	100.0%

Please refer to the Attachments for a USDA Soil Survey report of the Subject.

USGS Topographic Map:

The United States Geological Survey (USGS) topographic map for the Subject Property located off of DE SR-24 in Millsboro, DE 19966 indicates that there are wetland types within this study area. Please see the Attachments for the 2019 USGS Topographic Map.

WETLAND DELINEATION BACKGROUND INFORMATION:

Wetland Determination Criteria:

The COE methodology for delineating the wetland/upland boundary is determined using the U.S. Army Corps of Engineers *Wetlands Delineation Manual, 1987*. The wetland indicator status of observed dominant plant species is determined using the 1988 USFWS *National List of Plant Species that occur in Wetlands, Region 1 – Northeast*.

Methods:

The delineation procedure involves establishing a transect in a known wetland area and following that transect towards an upland area until wetland conditions no longer exist. At even intervals, the required criteria for hydric vegetation, soils, and hydrology are reviewed. Once a sample point is found to lack one of the three mandatory criteria for wetland status (hydrophytic vegetation, wetland hydrology, hydric soils), that area is examined more closely until the wetland limits are established. The wetland/upland line is then extended using the obtained transects data.

Vegetation:

For determining the presence of hydric vegetation, plant species within each community are visually identified by layer/strata (e.g., trees, saplings/shrubs, herbs, and woody vines) and listed in descending order of dominance. For each plant species, indicator status and categories are defined by the 1988 USFWS Region 1 plant list. The following list defines wetland plant indicator categories:

- **OBL** (Obligate Wetland Plants) occur greater than 99 % of the time in wetlands under natural conditions.
- **FACW** (Facultative Wetland Plants) occur between 67 % and 99 % of the time in wetlands under natural conditions.
- **FAC** (Facultative Plants) occur between 33 % and 67 % of the time in wetlands under natural conditions.
- **FACU** (Facultative Upland Plants) occur between 1 % and 33 % of the time in wetlands under natural conditions.
- **UPL** (Obligate Upland Plants) occur less than 1 % of the time in wetlands under natural conditions.

A "+" sign following an indicator status denotes that the species generally has a greater estimated probability of occurring in wetlands, while a "–" sign denotes a lesser probability of being present in wetlands. The wetland plant indicators are given for each dominant plant species identified during the field review. These have been recorded on the attached copies of Routine Wetland Determination data forms as well as the other investigations of wetland determination indicator criteria. Please refer to the Attachments for the Wetland Determination Data Form.

By COE criteria, if more than 50 % of the dominant plant species are OBL, FACW, or FAC, then the hydrophytic vegetation parameter is met.

The following vegetation was identified on the subject property; Quercus michauxii, Quercus bicolor, Quercus palustris, Acer rubrum, Alnus serrulate, Lindera benzoin, Cephalanthus occidentalis, Decodon verticillatus, Hydrocotyle prolifera, Phragmites australis, Panicum virgatum Spartina alterniflora and Spartina patens.

Hydrology:

For determining the presence of wetland hydrology, recorded data is the most reliable evidence in confirming that the required saturation duration of a minimum of 12.5 % of the growing season is satisfied. Unfortunately, most sites do not have recorded data. Therefore, reliance on primary and secondary field indicators such as inundation, soil saturation, and watermarks on woody vegetation are sought. Using indicators such as these, an evaluation of the site is made to determine if the Corps of Engineers criteria for wetland hydrology is met. Based on site observations, saturated soils, watermarks on woody vegetation and surface water were found in the wetland areas. Saturation was visible on aerial imagery as well as confirmed onsite. Please refer to the Attachments for the Wetland Determination Data Form.

Soils:

For determining if hydric soils are present, soil series mapped within the property boundaries are referenced to the Sussex County Soils Conservation Service classifications. Once a soil series is known to be hydric or to contain hydric soil inclusions, representative soil probes are taken in the field and are used to confirm the presence or absence of hydric soils. For non-sandy soils, indicators such as gleying, low matrix chroma (<2), and presence or absence of mottles are used to confirm soil type. Sandy soil indicators rely on the presence and distribution of organic matter within the upper sixteen (16) inches of the soil profile.

The following soil profiles were observed on the subject property; 10YR 3/2, 10YR 2/2, 10YR 5/2, and 10YR 3/1. Hydric soil indicators such as Histic Epipedon (A2) and organic bodies (A6) were observed. Soil conditions were noted as hydric and included loamy sand and sandy clay textures. It was also noted that a few surface depressions were observed throughout the forested area. Please refer to the Attachments for the Wetland Determination Data Form.

Wetland Identification (Flagging of Wetlands and Coordinates):

A total of forty-four (44) flags were used to mark off the wetland areas on the subject property. We installed the flags along the perimeter for wetland location purposes. We did not delineate the wetland perimeter in its entirety, we delineated everything in the proposed Subject Property. Please see the Attachments for flag coordinates and maps of the delineation.

INSPECTION CONCLUSION:

Based on site observations and data research, State and/or Federally regulated wetlands (+/- 2.5 acres) are located on the subject property. Freshwater forested/shrub wetlands, estuarine and marine wetlands, and estuarine and marine deepwater were observed on the subject property. Furthermore, wetland indicators (i.e., saturated hydrology, hydric vegetation and soils) are present. The wetland delineation was limited to tax parcel numbers 234-17.00-17.00, 234-17.00-19.00, 234-17.00-36.00, and 234-17.00-38.00 within the DelDOT Right-of-Way and did not include suspected wetlands on any adjoining properties.

Reference Materials:

Reference materials utilized during this study and report include:

1. "Corps of Engineers Wetlands Delineation Manual, 1987". Technical Report Y-87-1. Environmental Laboratory. U.S. Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

2. "National List of Plant Species that Occur in Wetlands, Region 1 – Northeast". 1988. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C.

3. National Wetlands Inventory. Fairmount Quadrangle. Office of Biological Services, U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C.

4. Soil Survey of Sussex County, Delaware Arc View Theme. U.S. Department of Agriculture, Soil Conservation Service. Washington, D.C.

5. USGS Topographical Quadrangle Maps. Fairmount Quadrangle. MapCard Version 2.0 Standard Edition.

Certification Disclosure

This property, or portions thereof, have been examined by Envirotech Environmental Consulting, Inc. (EECI) for the presence of Water of the United States including wetlands (Section 404 and Section 10), State Subaqueous Lands and State Tidal Wetlands based on the criteria set forth by the reviewing agencies in the form of manuals, policies, and procedures in place at the time that the investigation was conducted. Any of the enclosed resources that were found on the property are depicted in this report in accordance with our field investigations and detailed in reports prepared by EECI using best professional judgment.

Todd Fritchman

December 14, 2022

Mr. Todd Fritchman, Aquatic Biologist
Envirotech Environmental Consulting, Inc.
17605 Nassau Commons Boulevard, Unit D
Lewes, DE 19958

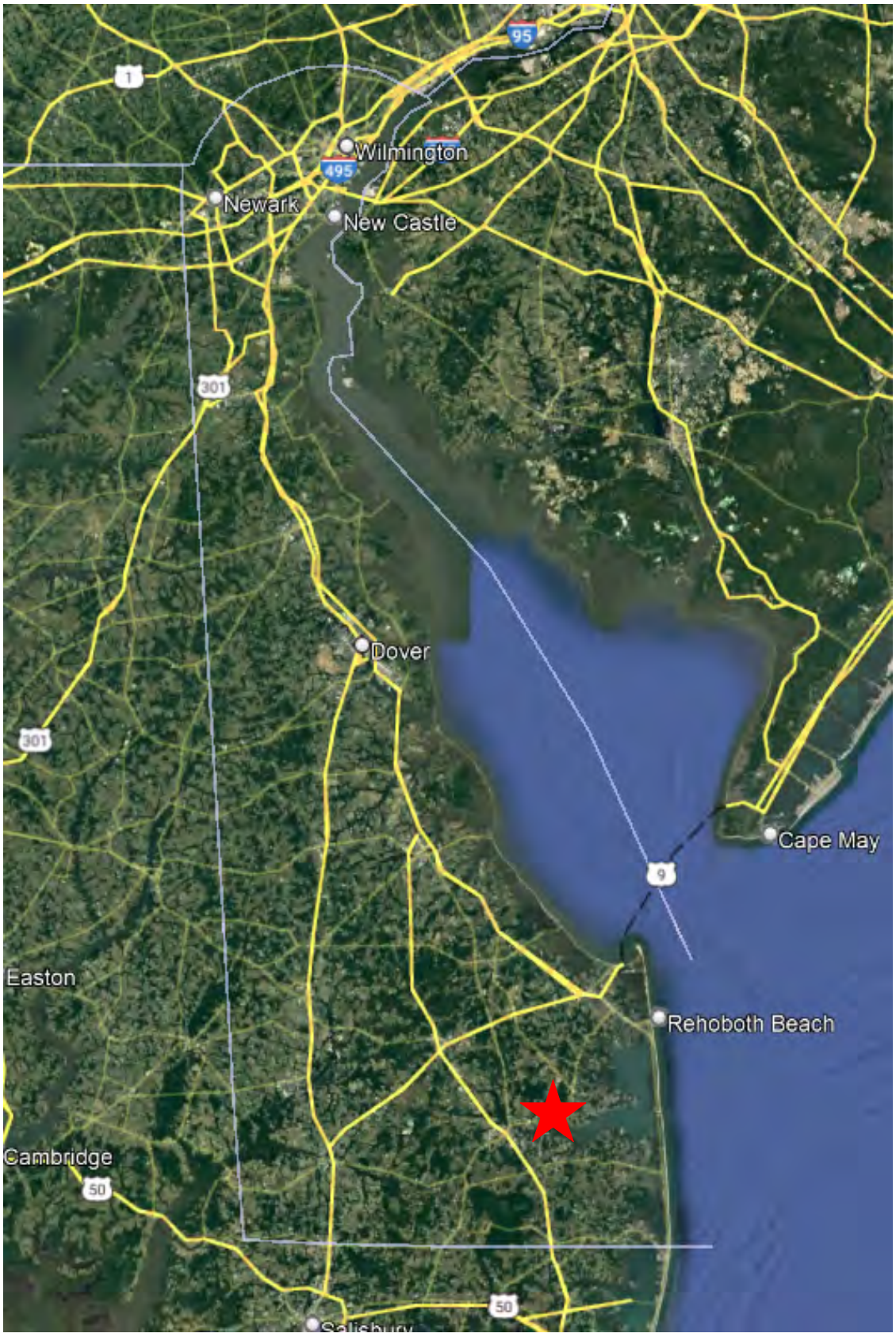
Date

ATTACHMENT A

Site Maps of the Subject Property

Enviro-tech
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

Chesapeake Utilities
DE State Route-24
Millsboro, Delaware 19966



LEGEND:

NOTE*Imagery Taken From Google Earth Pro*

★ = Subject Property (Delaware State Route-24) - Tax Map Parcel #'s 234-17.00-17.00, 234-17.00-19.00 and 234-17.00-36.00

Chesapeake Utilities
State Route-24
Millsboro, DE 19966

Envirotech
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

Legend
= Burton Pond Property (TMP# 234-17.00-17.00)
= Herring Creek Property (TMP# 234-17.00-36.00)
= Hazzard Property (TMP# 234-17.00-19.00)
= Absher Property (TMP# 234-17.00-38.00)

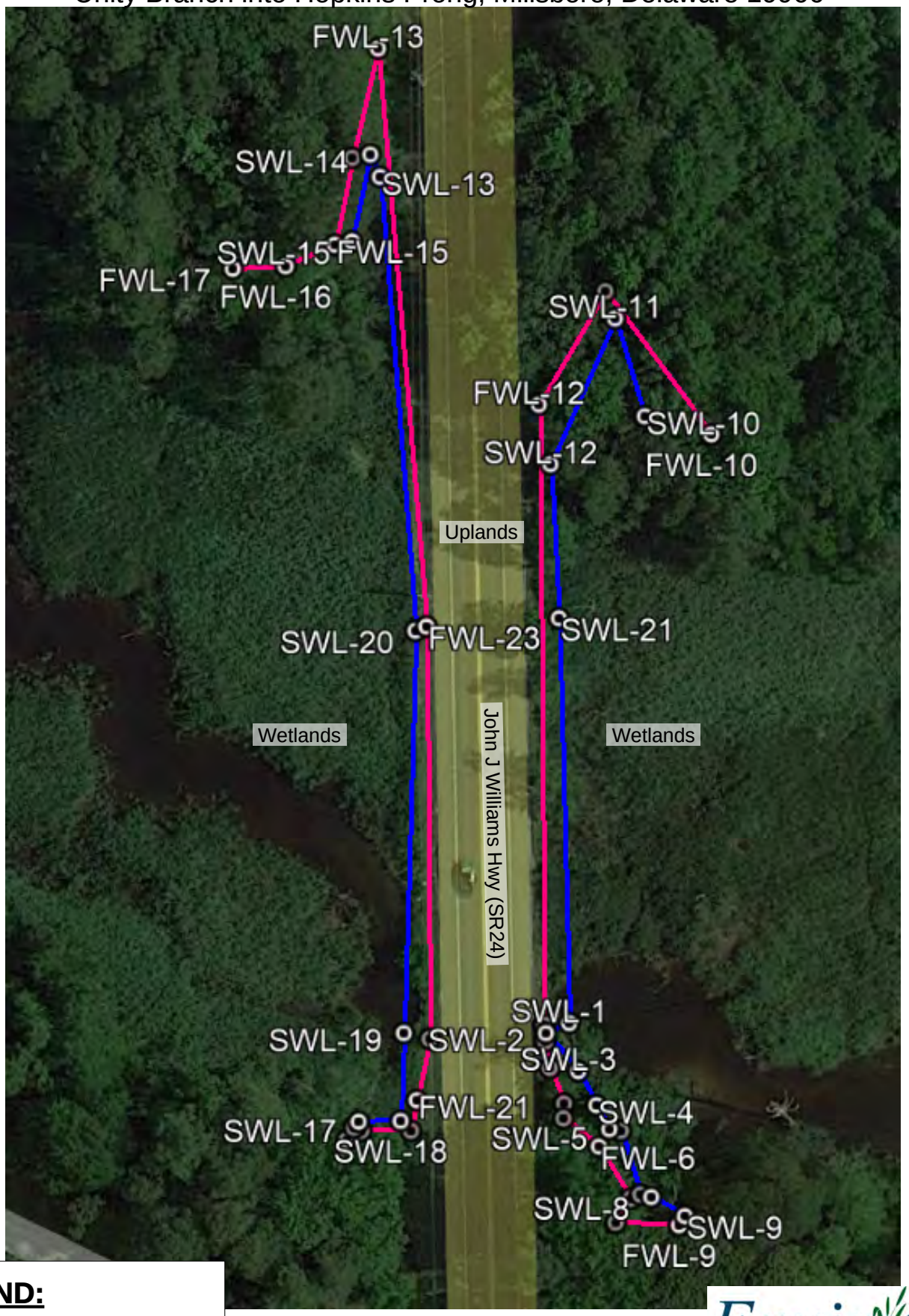
ATTACHMENT B

Site Map Depicting
Extent of the Wetland Delineation

Chesapeake Utilities - Wetland Delineation

SR24 Main Extension

Unity Branch into Hopkins Prong, Millsboro, Delaware 19966



LEGEND:

= Wetland Delineation Point

= Federal Wetland Line

= State Wetland Line

Imagery Taken From Google Earth Pro*Not to scale*

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Providing Environmental Solutions

ATTACHMENT C

Site Photographs

Chesapeake Utilities

Wetland Delineation
State Route 24
MIllsboro, DE 19966

Site Photo #1: Delaware State Route-24, western shoulder

Site Photo #2: Unity Branch, facing west

Site Photo #3: Common Alder (Alnus serrulata) and swamp groundnut (Apios americana)

Site Photo #4: Saltmeadow cordgrass (Spartina patens)

Envirotech
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

Chesapeake Utilities

Wetland Delineation
State Route 24
MIllsboro, DE 19966

Site Photo #9: Saltmarsh Cordgrass (Spartina alterniflora) across Unity Branch

Site Photo #10: Organic material build up, high tide marks

Site Photo #11: Facing east, over the Hopkins Prong of Hopkins Pond

Site Photo #12: Inland wetland area during low tide

Envirotech
ENVIRONMENTAL CONSULTING, INC.
Providing Environmental Solutions

Chesapeake Utilities

Wetland Delineation
State Route 24
Millsboro, DE 19966

Site Photo #5: Whorled Pennywort (Hydrocotyle prolifera)

Site Photo #6: Swamp Chestnut Oaks (Quercus michauxii)

Site Photo #7: Japanese Honeysuckle (Lonicera japonica)

Site Photo #8: Pin Oaks (Quercus palustris)

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Providing Environmental Solutions

Chesapeake Utilities

Wetland Delineation
State Route 24
Millsboro, DE 19966

Site Photo #13: Swamp Loosestrife (Decodon verticillatus) and North American Reed (Phragmites australis)

Site Photo #14: Soil Profile #1

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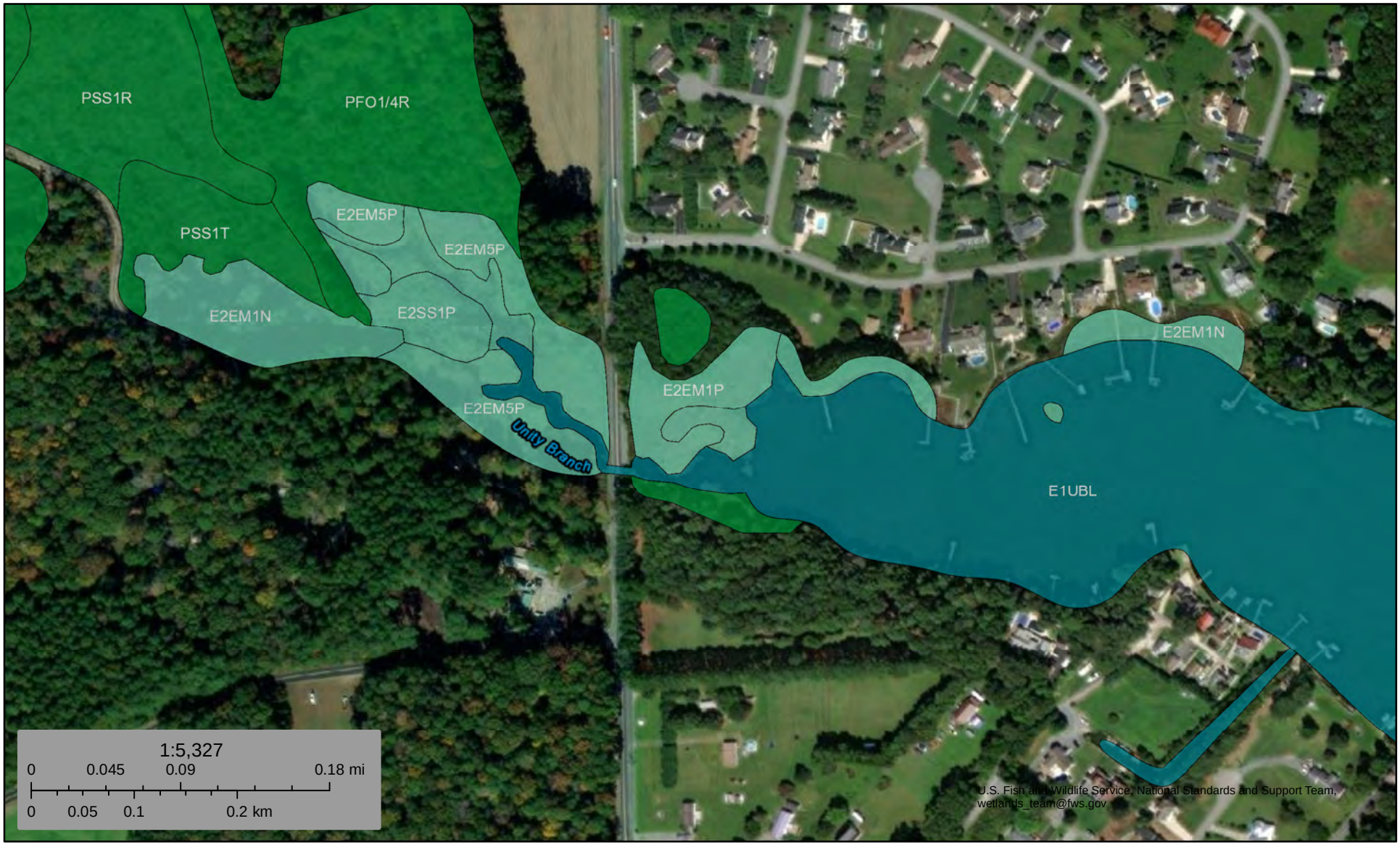
ATTACHMENT D

National Wetlands Inventory (NWI) Map

U.S. Fish and Wildlife Service
National Wetlands Inventory

Chesapeake Utilities



December 13, 2022

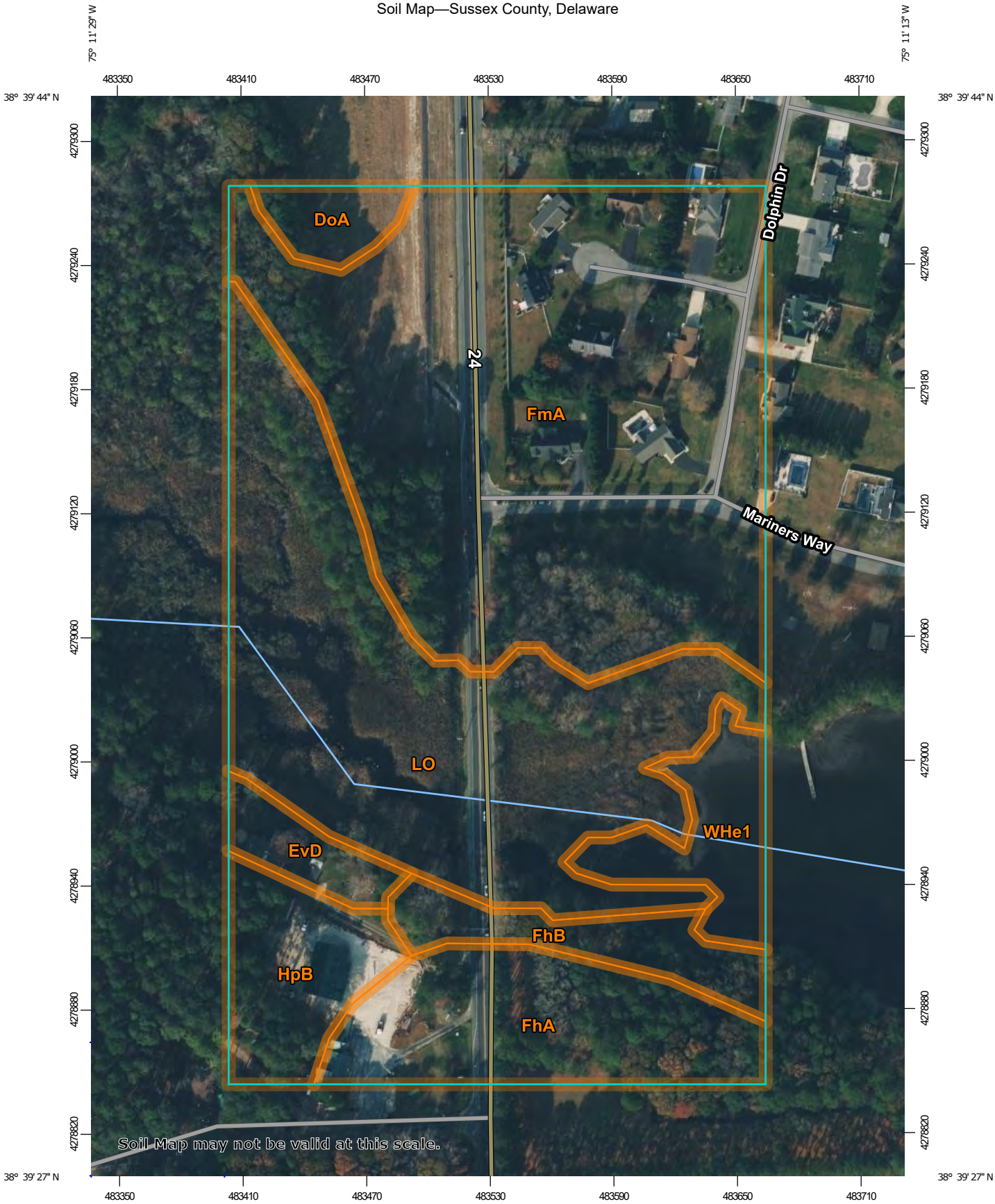
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

ATTACHMENT E

USDA Soil Report



Map Scale: 1:2,550 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 23, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DoA	Downer sandy loam, 0 to 2 percent slopes, Northern Tidewater Area	0.6	2.0%
EvD	Evesboro loamy sand, 5 to 15 percent slopes	0.6	2.3%
FhA	Fort Mott-Henlopen complex, 0 to 2 percent slopes	2.9	10.3%
FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes	1.2	4.1%
FmA	Fort Mott loamy sand, 0 to 2 percent slopes	11.9	42.4%
HpB	Henlopen loamy sand, 2 to 5 percent slopes	1.6	5.6%
LO	Longmarsh and Indiantown soils, frequently flooded	8.1	28.7%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	1.3	4.5%
Totals for Area of Interest		**28.1**	**100.0%**

United States Department of Agriculture

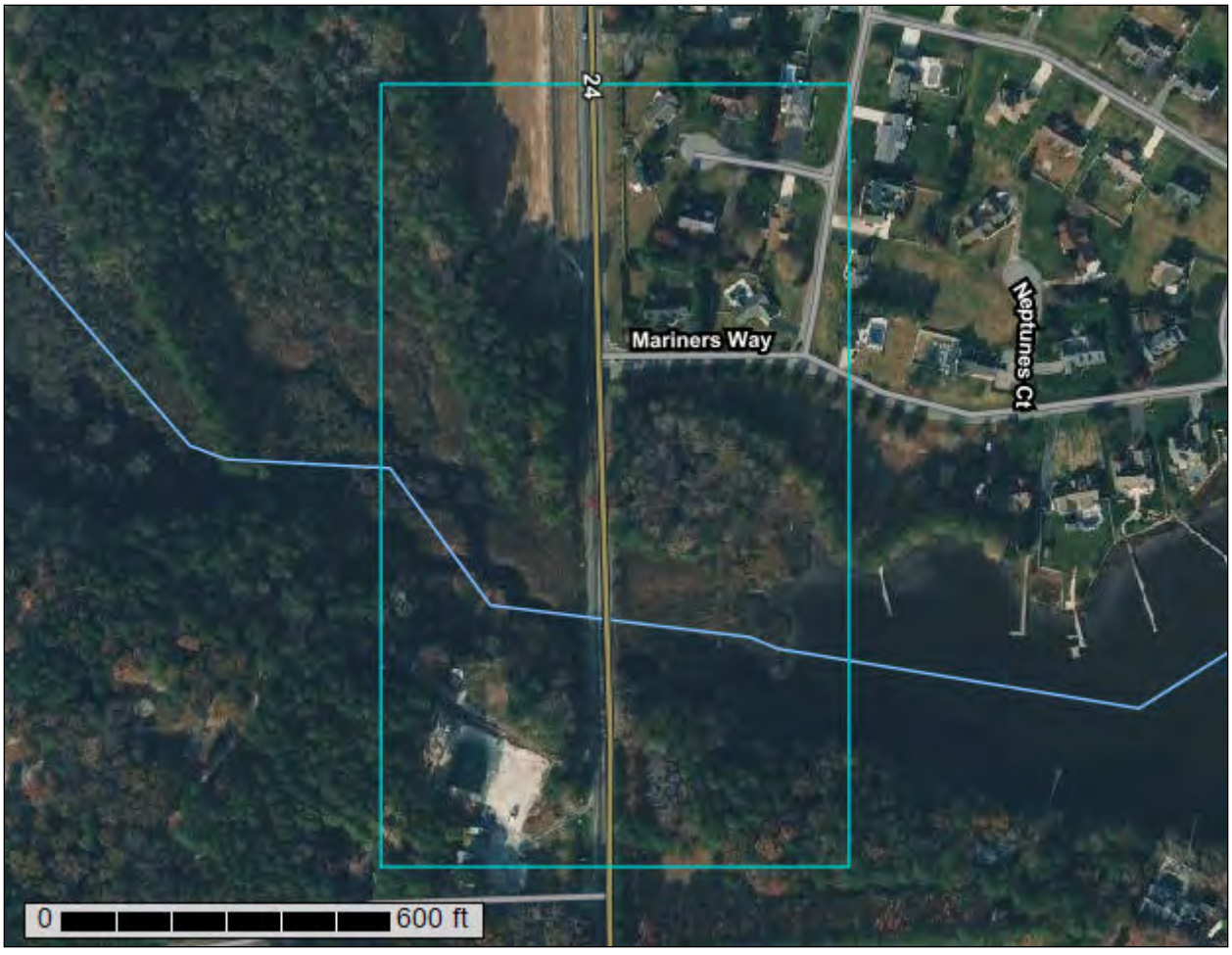
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Sussex County, Delaware

SR-24



December 13, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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EvD—Evesboro loamy sand, 5 to 15 percent slopes.....14
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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

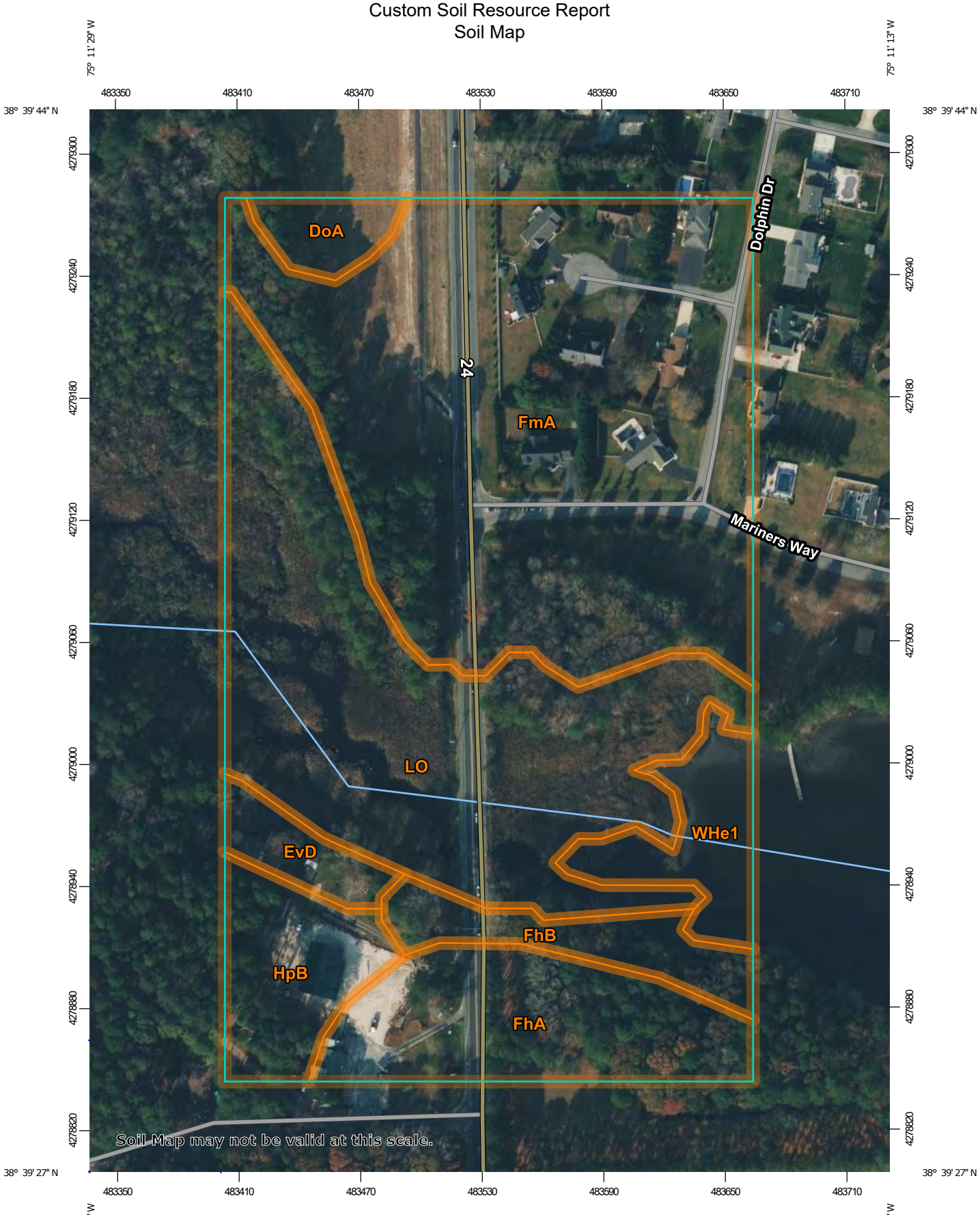
Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



Map Scale: 1:2,550 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
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- Perennial Water
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- Saline Spot
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- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Sussex County, Delaware
Survey Area Data: Version 23, Sep 14, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
DoA	Downer sandy loam, 0 to 2 percent slopes, Northern Tidewater Area	0.6	2.0%
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FhB	Fort Mott-Henlopen complex, 2 to 5 percent slopes	1.2	4.1%
FmA	Fort Mott loamy sand, 0 to 2 percent slopes	11.9	42.4%
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LO	Longmarsh and Indiantown soils, frequently flooded	8.1	28.7%
WHe1	Herring Creek mucky silt loam, 0 to 1 meter water depth	1.3	4.5%
Totals for Area of Interest		**28.1**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Sussex County, Delaware

DoA—Downer sandy loam, 0 to 2 percent slopes, Northern Tidewater Area

Map Unit Setting

National map unit symbol: 2thwd
Elevation: 0 to 190 feet
Mean annual precipitation: 41 to 50 inches
Mean annual air temperature: 46 to 64 degrees F
Frost-free period: 190 to 250 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Downer and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Downer

Setting

Landform: Knolls, flats, low hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Loamy fluviomarine deposits

Typical profile

Ap - 0 to 10 inches: sandy loam
BE - 10 to 16 inches: loamy sand
Bt - 16 to 28 inches: sandy loam
C1 - 28 to 48 inches: loamy sand
C2 - 48 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Galestown

Percent of map unit: 10 percent
Landform: Flats
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Ingleside

Percent of map unit: 5 percent
Landform: Flats
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hammonton

Percent of map unit: 5 percent
Landform: Broad interstream divides, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Linear
Hydric soil rating: No

EvD—Evesboro loamy sand, 5 to 15 percent slopes

Map Unit Setting

National map unit symbol: 1qtgc
Elevation: 0 to 200 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Evesboro and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Evesboro

Setting

Landform: Dunes, fluviomarine terraces, knolls, flats
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex

Parent material: Sandy eolian deposits and/or fluviomarine sediments

Typical profile

Ap - 0 to 4 inches: loamy sand
E - 4 to 16 inches: loamy sand
Bw - 16 to 39 inches: loamy sand
C - 39 to 80 inches: sand

Properties and qualities

Slope: 5 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): 6e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Runclint

Percent of map unit: 10 percent
Landform: Knolls, dunes, fluviomarine terraces, flats
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Fort mott

Percent of map unit: 5 percent
Landform: Flats, fluviomarine terraces, knolls
Landform position (three-dimensional): Rise
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Cedartown

Percent of map unit: 5 percent
Landform: Flats, dunes, knolls
Landform position (three-dimensional): Rise, talf
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Galloway

Percent of map unit: 5 percent
Landform: Flats, depressions
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Hydric soil rating: No

FhA—Fort Mott-Henlopen complex, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1qtgh
Elevation: 20 to 70 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Fort mott and similar soils: 45 percent
Henlopen and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fort Mott

Setting

Landform: Fluviomarine terraces, flats
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits over fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 24 inches: loamy sand
Bt - 24 to 36 inches: sandy loam
C - 36 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.28 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Henlopen

Setting

Landform: Dunes, marine terraces
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy eolian deposits and loamy fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 46 inches: loamy sand
Bt - 46 to 62 inches: sandy loam
C - 62 to 80 inches: sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Ingleside

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

Runclint

Percent of map unit: 5 percent
Landform: Flats, knolls, dunes
Hydric soil rating: No

Downer

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

Rosedale

Percent of map unit: 5 percent
Landform: Knolls, flats
Hydric soil rating: No

FhB—Fort Mott-Henlopen complex, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1qtgj
Elevation: 20 to 70 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Fort mott and similar soils: 45 percent
Henlopen and similar soils: 35 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fort Mott

Setting

Landform: Fluviomarine terraces, knolls, flats
Landform position (three-dimensional): Rise
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Sandy eolian deposits over fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 24 inches: loamy sand
Bt - 24 to 36 inches: sandy loam
C - 36 to 80 inches: loamy sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.28 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Henlopen

Setting

Landform: Dunes, marine terraces
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits and loamy fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 46 inches: loamy sand
Bt - 46 to 62 inches: sandy loam
C - 62 to 80 inches: sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Ingleside

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

Downer

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

Runclint

Percent of map unit: 5 percent
Landform: Flats, knolls, dunes
Hydric soil rating: No

Rosedale

Percent of map unit: 5 percent
Landform: Knolls, flats
Hydric soil rating: No

FmA—Fort Mott loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 1qtgk
Elevation: 10 to 120 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Fort mott and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fort Mott

Setting

Landform: Fluviomarine terraces, flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits over fluviomarine sediments fluviomarine deposits

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 24 inches: loamy sand
Bt - 24 to 36 inches: sandy loam
C - 36 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.28 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Ingleside
Percent of map unit: 5 percent
Landform: Fluviomarine terraces, depressions, flats
Landform position (three-dimensional): Dip
Down-slope shape: Linear, concave
Across-slope shape: Linear, concave
Hydric soil rating: No

Rosedale
Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Downer
Percent of map unit: 5 percent
Landform: Fluviomarine terraces, flats
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Runclint
Percent of map unit: 5 percent
Landform: Fluviomarine terraces, flats
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

HpB—Henlopen loamy sand, 2 to 5 percent slopes

Map Unit Setting
National map unit symbol: 1qth4
Elevation: 20 to 70 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Henlopen and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Henlopen

Setting

Landform: Dunes, marine terraces
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Sandy eolian deposits and loamy fluviomarine sediments

Typical profile

Ap - 0 to 10 inches: loamy sand
E - 10 to 46 inches: loamy sand
Bt - 46 to 62 inches: sandy loam
C - 62 to 80 inches: sand

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Ingleside

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

Runclint

Percent of map unit: 5 percent
Landform: Flats, knolls, dunes
Hydric soil rating: No

Rosedale

Percent of map unit: 5 percent
Landform: Knolls, flats
Hydric soil rating: No

Fort mott

Percent of map unit: 5 percent
Landform: Flats
Hydric soil rating: No

LO—Longmarsh and Indiantown soils, frequently flooded

Map Unit Setting

National map unit symbol: 1qtj1
Elevation: 0 to 120 feet
Mean annual precipitation: 42 to 48 inches
Mean annual air temperature: 52 to 58 degrees F
Frost-free period: 180 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Longmarsh and similar soils: 43 percent
Indiantown and similar soils: 37 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Longmarsh

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 19 inches: mucky loam
Cg1 - 19 to 34 inches: sandy loam
Cg2 - 34 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Description of Indiantown

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy alluvium

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 25 inches: mucky silt loam
Cg - 25 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 10 inches
Frequency of flooding: Frequent
Frequency of ponding: Frequent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Zekiah

Percent of map unit: 10 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Manahawkin

Percent of map unit: 5 percent
Landform: Flood plains, swamps
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Klej

Percent of map unit: 5 percent
Landform: Flats
Landform position (three-dimensional): Rise
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

WHe1—Herring Creek mucky silt loam, 0 to 1 meter water depth

Map Unit Setting

National map unit symbol: 2xhnk
Elevation: 0 feet
Mean annual precipitation: 41 to 49 inches
Mean annual air temperature: 53 to 60 degrees F
Frost-free period: 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Herring creek, 0 to 1 meter water depth, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Herring Creek, 0 To 1 Meter Water Depth

Setting

Landform: Estuarine tidal streams
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Mainland cove fine-silty estuarine deposits over woody organic material

Typical profile

Aseg - 0 to 3 inches: mucky silt loam
Cseg - 3 to 24 inches: silt loam
Oeseb1 - 24 to 51 inches: mucky peat
Oeseb2 - 51 to 69 inches: mucky peat

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Subaqueous
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: Very frequent
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Maximum salinity: Strongly saline (16.0 to 35.0 mmhos/cm)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Yes

Minor Components

Metedeconk, 0 to 1 meter water depth

Percent of map unit: 10 percent
Landform: Estuarine tidal streams
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

Truitt, 0 to 1 meter water depth

Percent of map unit: 5 percent
Landform: Mainland coves
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

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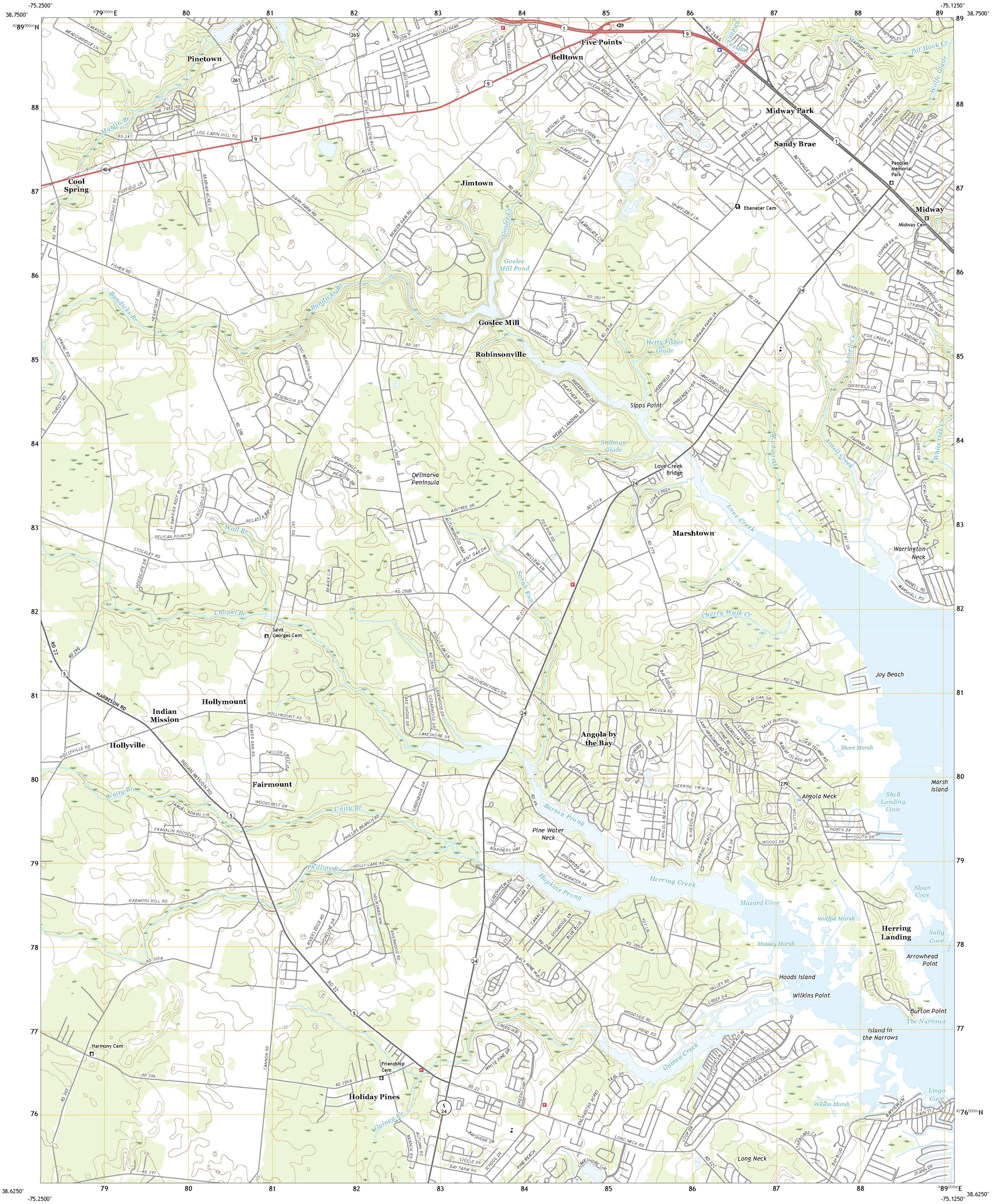
ATTACHMENT F

2019 USGS Topographic Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

FAIRMOUNT QUADRANGLE
DELAWARE - SUSSEX COUNTY
7.5-MINUTE SERIES



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid:Universal Transverse Mercator, Zone 18S
This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery	NAIP,	July 2017 - September 2017
Roads	U.S. Census Bureau,	2016
Names	GNIS,	1979 - 2019
Hydrography	National Hydrography Dataset,	1899 - 2018
Contours	National Elevation Dataset,	2013
Boundaries	Multiple sources; see metadata file	2017 - 2018
Wetlands	FWS National Wetlands Inventory	2007

MN
GN
11°49'
210 MILS
0°7'
2 MILS
UTM GRID AND 2019 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000 - m Square ID
VH
Grid Zone Designation
18S

SCALE 1:24 000
1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 MILES 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 5 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

DELAWARE
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 Milton
2 Lewes
3 Cape Henlopen
4 Harbeson
5 Rehoboth Beach
6 Millsboro
7 Frankford
8 Bethany Beach

ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

FAIRMOUNT, DE
2019

NSN 7643016301995
NGA REF NO. USGSX24K14853

ATTACHMENT G

Wetland Determination Data Form

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Chesapeake Utilities - Delaware State Route 24 City/County: Millsboro/Sussex Sampling Date: June 1, 2022

Applicant/Owner: Garth Jones State: DE Sampling Point: _____

Investigator(s): Todd Fritchman and Kieran Burns Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Forested Wetland and Marine wetland Local relief (concave, convex, none): _____ Slope (%): 0-15

Subregion (LRR or MLRA): LRRT Lat: 38.66027 N Long: 75.189200 W Datum: _____

Soil Map Unit Name: Fort Mott-Henlopen complex NWI classification: E1UBL, E2EM1P, E2EM5P, E2EM1N and PFO1R

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✔ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✔ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✔ No _____	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** _____
Hydric Soil Present?	Yes ✔ No _____	
Wetland Hydrology Present?	Yes ✔ No _____	

Remarks:

Weather was partly cloudy and 71 degrees F.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ✔ Sediment Deposits (B2)
- ✔ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ✔ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ✔ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ✔ No _____ Depth (inches): _____

Water Table Present? Yes ✔ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✔ No _____ Depth (inches): _____

Wetland Hydrology Present? **Yes** ✔ **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site photos attached

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Swamp Chestnut Oak (Quercus michauxii)	20	Yes	FACW
2. Swamp White Oak (Quercus bicolor)	15		FACW
3. Pin Oak (Quercus palustris)	15		FACW
4. Red Maple (Acer rubrum)	10		FAC
5.			
6.			
	60	= Total Cover	
50% of total cover: 30	20% of total cover: 12		

Sapling Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
	0	= Total Cover	
50% of total cover:	20% of total cover:		

Shrub Stratum (Plot size: _____)			
1. Common Alder (Alnus serrulata)	25	Yes	OBL
2. Smooth Spicebush (Lindera benzoin)	20		FACW
3. Button Bush (Cephalanthus occidentalis)	20		OBL
4.			
5.			
6.			
	65	= Total Cover	
50% of total cover: 32.5	20% of total cover: 13		

Herb Stratum (Plot size: _____)			
1. Swamp Loosestrife (Decodon verticillatus)	10		OBL
2. Whorled Pennywart (Hydrocotyle prolifera)	10		OBL
3. North American Reed (Phragmites australis)	20	Yes	FACW
4. Tall Switchgrass (Panicum virgatum)	15		FAC
5. Saltmarsh Cordgrass (Spartina alterniflora)	15		OBL
6. Saltmeadow Cordgrass (Spartina patens)	15		FACW
7.			
8.			
9.			
10.			
11.			
	85	= Total Cover	
50% of total cover: 42.5	20% of total cover: 17		

Woody Vine Stratum (Plot size: _____)			
1. Swamp Groundnut (Apios americana)	30	Yes	FACW
2. Japanese Honeysuckle (Lonicera japonica)	15		FACU
3. Virginia Creeper (Parthenocissus quinquefolia)	15		FACU
4.			
5.			
	60	= Total Cover	
50% of total cover: 30	20% of total cover: 12		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 14 (A)

Total Number of Dominant Species Across All Strata: 16 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	105	x 2 =	210
FAC species	30	x 3 =	90
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	200 (A)		365 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100				M	Loamy Sand	
4-9	10 YR 2/2	100				M	Loamy Sand	heavy organic material
10-15	10 YR 5/2	70	10 YR 3/1	30		M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ✔ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ✔ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ✔ **No** ☐

Remarks:

Site photos attached

ATTACHMENT H

Wetland Flag Location Coordinates

Name	Latitude	Longitude
SWL-1	38.659000	-75.189216
SWL-2	38.658988	-75.189252
SWL-3	38.658942	-75.189202
SWL-4	38.658901	-75.189174
SWL-5	38.658872	-75.189154
SWL-6	38.658870	-75.189136
SWL-7	38.658793	-75.189106
SWL-8	38.658790	-75.189089
SWL-9	38.658767	-75.189037
SWL-10	38.659733	-75.189099
SWL-11	38.659851	-75.189145
SWL-12	38.659675	-75.189245
SWL-14	38.660049	-75.189524
SWL-15	38.659944	-75.189552
SWL-13	38.660022	-75.189509
SWL-18	38.658882	-75.189477
SWL-17	38.658881	-75.189542
SWL-16	38.658874	-75.189549
SWL-19	38.658988	-75.189472
SWL-20	38.659474	-75.189454
SWL-21	38.659489	-75.189232

Name	Latitude	Longitude
FWL-1	38.658998	-75.189255
FWL-2	38.658978	-75.189253
FWL-3	38.658946	-75.189246
FWL-4	38.658903	-75.189224
FWL-5	38.658885	-75.189225
FWL-6	38.658851	-75.189170
FWL-7	38.658788	-75.189121
FWL-8	38.658759	-75.189144
FWL-9	38.658756	-75.189046
FWL-10	38.659711	-75.188996
FWL-11	38.659884	-75.189160
FWL-12	38.659747	-75.189263
FWL-13	38.660177	-75.189512
FWL-14	38.660045	-75.189552
FWL-15	38.659940	-75.189579
FWL-16	38.659914	-75.189655
FWL-17	38.659911	-75.189737
FWL-20	38.658870	-75.189461
FWL-19	38.658870	-75.189538
FWL-18	38.658859	-75.189560
FWL-21	38.658907	-75.189452
FWL-22	38.658981	-75.189432
FWL-23	38.659479	-75.189437

ATTACHMENT F

State and Federal Agency Letters

HCA
DELAWARE HISTORICAL & CULTURAL AFFAIRS

Delaware Division of Historical & Cultural Affairs
29 N. State St., Dover, Delaware 19901
Tel. (302) 736-7400 | Fax. (302) 739-5660
history.delaware.gov

July 15, 2022

Kieran Burns
Envirotech Environmental Consulting, Inc.
17605 Nassau Commons Boulevard, Unit D
Lewes, DE 19958

Subject: **Chesapeake Utilities SR 24 Gas Main Extension**
SHPO Project No. 2022.06.20.02

Dear Mr. Burns:

We understand from your letter that the applicant is seeking a permit from the US Army Corps of Engineers (USACOE) for the extension of a gas main located along State Route 24 from Hollymount Road to Green Road in Rehoboth Beach. The gas main is entirely within DelDOT Right-of-Way (ROW). Because of the need for authorization from the USACOE, the project is subject to compliance with Section 106 of the National Historic Preservation Act of 1966 (as amended).

There is one historic property within the area of potential effects (APE). The Holly Lakes Campsites (S09844) has not been evaluated for eligibility for the National Register of Historic Places (NRHP), but will not be impacted due to the limited nature of the proposed undertaking. There are three known historic buildings within a half mile radius of the APE. Due to the distance and the limited nature of the proposed undertaking, these structures will not be impacted. There are no known archaeological sites within the APE. There is one known archaeological site within a half-mile radius of the APE that will not be impacted due to distance. As the APE is limited to existing DelDOT ROW, there is low potential for any intact archaeological sites due to past disturbance.

We find there to be No Historic Properties Affected by the proposed undertaking. Should plans change, additional consultation may be necessary.

Please feel free to contact me if you have any questions at (302) 736-7431 or sarah.carr@delaware.gov.

Sincerely,

Sarah Carr
Cultural Preservation Specialist
cc: Gwen Davis, Deputy SHPO
John Martin, DelDOT

National Register-listed Properties (Basemap - Topographic)

June 20, 2022

Other Historic Properties

- other surveyed, assigned CRS inventory #
- DE_Roadways_Main - BRIDGES
- DE_Water - FlowLine
- SPO
- Survey Boundary 1
- Survey Boundary 2
- DE_Boundaries - Communities
- State Parcels

1:2,257

0 0.01 0.03 0.06 mi

0 0.02 0.04 0.09 km

Surdex Corp, Delaware State Housing Authority and the Delaware Office of State Planning Coordination

STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL
DIVISION OF FISH & WILDLIFE
RICHARDSON & ROBBINS BUILDING
89 KINGS HIGHWAY
DOVER, DELAWARE 19901

DIRECTOR'S OFFICE

PHONE
(302) 739-9910

June 28, 2022

Kieran Burns
Envirotech Environmental Consulting, Inc.
17605 Nassau Commons Boulevard
Unit D
Lewes, DE 19958

Re: ETECH 2022 SR24 Rehoboth Gas Main Extension

Dear Kieran:

Thank you for contacting the Species Conservation and Research Program (SCRP) about information on rare, threatened and endangered species, unique natural communities, and other significant natural resources as they relate to the above referenced project.

Please note that these are general comments provided in response to a general information request – they do not include recommended time of year restrictions, guidance in regards regulatory procedures related to federally protected species, or suggestions to reduce impacts to other important species and habitats. Therefore, it is not appropriate to utilize these comments as a review for a specific project. When you have a specific project for the site, please contact us again with the full description/scope of work of the proposed project and maps that clearly delineate the boundaries and limits of disturbance where the work is to occur.

State Natural Heritage Site
A review of our database indicates that there are currently no records of state-rare or federally listed plants, animals or natural communities at this project site. As a result, at present, this project does not lie within a State Natural Heritage Site, nor does it lie within a Delaware National Estuarine Research Reserve which are two criteria used to identify "Designated Critical Resource Waters" in the Army Corps of Engineers (ACOE) Nationwide Permit General Condition No. 22. A copy of this letter shall be included in any permit application or pre-construction notification submitted to the Army Corps of Engineers for activities on this property.

Drilling
The project description indicates that direct impacts to waterbodies would be avoided through use of trenchless construction methods, such as horizontal directional drill; therefore, no time of

year restrictions or other measures are requested for anadromous fish species or for resident gamefish species. If this changes, we would likely request that in-water work not occur from March 1st to September 30th to allow time for Summer Flounder (*Paralichthys dentatus*) young of the year, which utilize Hopkins Prong as a nursery area, to grow large enough to be less vulnerable to habitat-altering activities and then migrate out of the system. Please contact us again for further guidance.

Although the use of a directional drill has less of an impact than other methods, such as trenching, there is still a potential for frac-outs to occur which could impact wetlands and water bodies within the project area. Therefore, we highly recommend that a frac-out contingency plan be in place prior to the start of project activities. The contingency plan should include the following:

1. A provision to contain materials released,
2. A clean-up protocol, and
3. Arrangements for an experienced representative (drilling crew or consultant) to watch the site at all times so that the operation can be shut down immediately in the event a frac-out occurs.

In addition, on-site staff should have access to the DNREC 24-hour hotline phone number (1-800-662-8802) to report any environmental release or fish kill. Immediate notification of any environmental release is imperative. Please also contact Bruce Cole, Fisheries Biologist, at Bruce.Cole@delaware.gov or 302-735-2961.

Mature Forest
A visual analysis of our historical database indicated that the forest block near the project area has likely maintained some degree of forest cover since 1937. This constitutes the potential for a mature forest and, as such, the potential for rare, threatened, or endangered species that rely on this type of habitat. We recommend that a full ecological assessment be implemented to document any sensitive habitats and/or species at the proposed project location.

Key Wildlife Habitat
The Freshwater Tidal Forested and Scrub-Shrub Wetlands on this property is mapped as Key Wildlife Habitat (KWH) in the Delaware Wildlife Action Plan (DEWAP) because it is rare within the state and has the potential to harbor a high diversity of Species of Greatest Conservation Need (SGCN). Although designation as KWH is non-regulatory, these maps are intended to help guide site-specific conservation planning efforts. Impacts to KWH should be minimized to the greatest extent practicable.

The DEWAP is a comprehensive strategy for conserving the full array of native wildlife and habitats, common and uncommon, as vital components of the state's natural resources. This document can be viewed via the Division of Fish and Wildlife's website at https://dnrec.alpha.delaware.gov/fish-wildlife/conservation/wildlife-action-plan/.

Delaware Ecological Network
Habitat on this parcel has been identified as core wildlife habitat by the Delaware Ecological Network (DEN). The DEN, although non-regulatory, is a statewide conservation network developed using GIS and field collected datasets that help to identify and prioritize ecologically

important areas for natural resource protection. The DEN includes ecologically important areas such as forests, wetlands, streams, habitats that supports rare species and areas of especially high quality. The DEN includes the following key elements: 1) core areas – contain relatively intact natural ecosystems, and provide high-quality habitat for native plants and animals, 2) hubs – slightly fragmented aggregations of core areas, plus contiguous natural cover and 3) corridors – link core areas together, allowing wildlife movement and seed and pollen transfer between them.

State Natural Area
The proposed project area occurs within Delaware's Natural Areas Inventory. State Natural Areas are composed of areas of land and/or water, whether in public or private ownership, which have retained or reestablished its natural character (although it need not be undisturbed), has unusual flora or fauna, or has biotic, geological, scenic, or archaeological features of scientific or educational value. If you require further information about this area for your planning, please contact Melanie Cucunato at 302-739-9039 or Melanie.Cucunato@delaware.gov.

We are continually updating our records on Delaware's rare, threatened and endangered species, unique natural communities and other significant natural resources. If the start of the project is delayed more than a year past the date of this letter, please contact us again for the latest information.

Please feel free to contact me with any questions or if you require additional information.

Sincerely,

Danielle Ellis
Environmental Review Coordinator
Phone: (302) 223-2446
6180 Hay Point Landing Road
Smyrna, DE 19977

(See invoice on next page)

United States Department of the Interior
U.S. Fish & Wildlife Service
Chesapeake Bay Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401
410/573 4575

Online Certification Letter

Today's date: 06/16/2022

Project: Chesapeake Utilities-SR 24 Main Extension

Dear Applicant for online certification:

Thank you for using the U.S. Fish and Wildlife Service (Service) Chesapeake Bay Field Office online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the referenced project in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA).This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

Based on this information and in accordance with section 7 of the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), we certify that except for occasional transient individuals, no federally listed endangered or threatened species are known to exist within the project area. Therefore, no Biological Assessment or further section 7 consultation with the U.S. Fish and Wildlife Service is required. Should project plans change, or if additional information on the distribution of listed or proposed species becomes available, this determination may be reconsidered.

This response relates only to federally protected threatened or endangered species under our jurisdiction. For additional information on threatened or endangered species in Maryland, you should contact the Maryland Wildlife and Heritage Division at (410) 260-8573. For information in Delaware you should contact the Delaware Division of Fish and Wildlife, Wildlife Species Conservation and Research Program at (302) 735-8658. For information in the District of Columbia, you should contact the National Park Service at (202) 339-8309.

The U.S. Fish and Wildlife Service also works with other Federal agencies and states to minimize loss of wetlands, reduce impacts to fish and migratory birds, including bald eagles, and restore habitat for wildlife. Information on these conservation issues and how development projects can avoid affecting these resources can be found on our website (www.fws.gov/chesapeakebay)

We appreciate the opportunity to provide information relative to fish and wildlife issues, and thank you for your interest in these resources. If you have any questions or need further assistance, please contact Chesapeake Bay Field Office Threatened and Endangered Species program at (410) 573-4527.

Sincerely,

Genevieve LaRouche
Field Supervisor

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: June 16, 2022
Project Code: 2022-0055116
Project Name: Chesapeake Utilities - Garth Jones

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/birds/policies-and-regulations.php.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/birds/policies-and-regulations/executive-orders/e0-13186.php.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

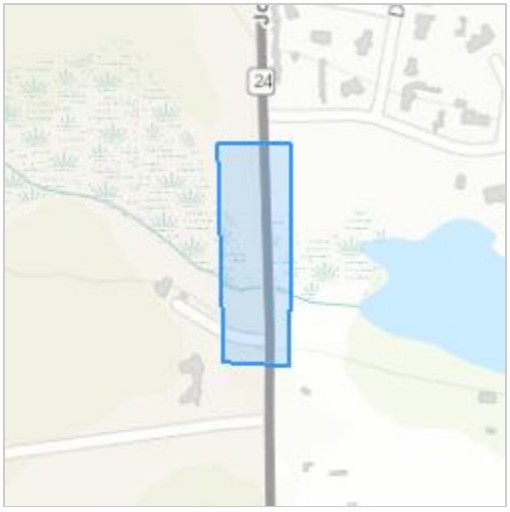
This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

Project Summary

Project Code: 2022-0055116
Event Code: None
Project Name: Chesapeake Utilities - Garth Jones
Project Type: Distribution Line - Maintenance/Modification - Below Ground
Project Description: State Route 24 Main Extension
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.659318999999996,-75.18945296412338,14z



Counties: Sussex County, Delaware

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Insects

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

- The monarch is a candidate species and not yet listed or proposed for listing. There are generally no section 7 requirements for candidate species (FAQ found here: https://www.fws.gov/savethemonarch/FAQ-Section7.html).

Species profile: https://ecos.fws.gov/ecp/species/9743

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

Wetlands

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

ESTUARINE AND MARINE DEEPWATER

- Estuarine

FRESHWATER FORESTED/SHRUB WETLAND

- Palustrine

IPaC User Contact Information

Agency:	Envirotech Environmental Consulting, Inc.
Name:	Kieran Burns
Address:	17605 Nassau Commons Blvd
Address Line 2:	Unit D
City:	Lewes
State:	DE
Zip:	19958
Email	kieran@envirotechecinc.com
Phone:	3026845201